

PROF. JAMES TRUMAN AND THE TRUMAN DENTAL SOCIETY OF THE UNIVERSITY OF PENNSYLVANIA.



## Reply to the Digest of Mayrhofer's Book.

By J. P. BUCKLEY, D.D.S., Chicago, Ill.

I have carefully read, in the March number of *ITEMS OF INTEREST*, the digest of a book by Dr. Mayrhofer (published in Germany), in which reference has been made to a remedy for putrescent pulps which I gave to the profession some years ago, viz., *formocresol* (tricrosol and formalin).

In brief reply, permit me to say first, that if the author is correctly quoted in the digest, he misunderstands my method of using formocresol, as I shall show later. He admits that this remedy can be hermetically sealed in the pulp chamber of a putrescent root-canal without what he has chosen to call "clinical symptoms"; and his own investigation has shown the remedy to possess strong disinfectant properties. In this connection he says: "From the clinical point of view we have in the tricrosol-formalin mixture a valuable addition to our medicine chest. Its strong penetrating odor predominates the fetid odor in putrescent pulps; and its obtunding action is more powerful than that of phenol (carbolic acid), while its bactericidal action is as strong as pure phenol." As a matter of fact, formocresol, if properly prepared, is a much stronger disinfectant than phenol.

The only thing to which I might take exception is the Doctor's bare statement that my chemistry needs "further elucidation," so far as the action of formaldehyd or ammonia and hydrogen sulphid is concerned. If

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he doubts the presence of these gases in a purely putrescent pulp, then it would, indeed, be difficult for me to satisfactorily explain to him my deductions; but if he grants that these gases may be, and doubtless are, present when a pulp dies and undergoes decomposition, it should be easy for him to understand the action of formocresol, as explained in my writings upon this subject.

In the digest he has made no attempt to show that these gases are not present, nor has he explained wherein my deductions are faulty from a chemical viewpoint. It is true that he again states that "from a bacteriologic point of view this hypothesis (meaning my chemical reasoning) is a complete failure," and he bases this statement on the ground that he is able to find bacteria in the lumen of the canal after formocresol has once been sealed in the pulp chamber, over the mouth of the canal. It is in this that he misunderstands my method of using the remedy, for he says: "Buckley himself advises to place a pellet of cotton saturated with formocresol over the canal openings, in order to counteract the action of the end-products of albuminous decomposition." This is correct as far as it goes, but the Doctor should have read on, and he would have found that this is only my *first treatment*, after which I advise mechanically cleansing the root, and then hermetically sealing the remedy, modified to meet the conditions as found in the canal. This is what the Doctor would be lead to do from his own investigation.

I admit that in my writings upon this subject I have placed the *intermediate* and *end-products* of pulp decomposition in the foreground, even over bacteria, though the latter must be the exciting agent. I have so written to emphasize the importance of considering the presence of these products. It has seemed to me that the one thing in the mind of dentists here has been "to kill the germ." This is essential, of course, and I have never ignored it, as a review of my writings will show; but there are other things to be considered in the rational treatment of these conditions. For example, mercury bichlorid is one of our strongest and best disinfectants, but it fails absolutely to meet the needs of a remedy for treating putrescent pulps. It will "kill the germ," but it does not act chemically upon the poisonous intermediate and gaseous end-products in such a manner as to prevent "clinical symptoms" when hermetically sealed in a putrescent canal.

From the digest I must conclude that Dr. Mayrhofer has emphasized his findings for the purpose of showing the advantage of his balsam of Peru root filling over pastes composed of zinc oxid, formaldehyd and other ingredients. I know nothing of the virtues of balsam of Peru for filling root canals, as advocated by the Doctor. I have never used the prepara-

tion. I do know, however, that I have never filled a root canal with the zinc oxid-formaldehyd paste; and I fear that it is in this that I have been misunderstood, not only by the author of this book, but by many in the profession. Therefore, I shall take advantage of this opportunity to place myself on record in the correct light.

**Misrepresentations of  
Buckley's Method**

There is a firm in Europe selling to the profession "Dr. Arthur Schreier's Tricresol Formalin Paste and Solution for the Treatment of Pulp Decomposition (Dr. J. P. Buckley's Method)." This paste has been advertised in the *Dental Cosmos*, and circulars have been sent to dentists in the United States by a firm in New York which claims to be the sole authorized importer. The method of treating these conditions and filling root canals as advertised by this firm is not *my method*, and this firm is using my name in connection with the sale of this paste without my consent. While they do not say directly that the paste is mine, they do say "Dr. J. P. Buckley's Method," which naturally would lead the profession to believe that I advocate the use of the paste. One Chicago firm, using my name in selling formocresol, advocates the use of the remedy in such a manner that, if so used, the dentist would doubtless have had to extract the tooth.

As the profession well knows, the formulas of all my remedies are an "open book," and because statements have been made in connection with the sale of remedies, which statements have been attributed to me and for which I am not responsible, I have arranged with the well-known pharmaceutical firm of Eli, Lilly & Co., of Indianapolis, to compound my formulas for the profession from pure drugs, true to the formulas which I have suggested.

**Buckley's Methods  
Correctly Described**

In order that Dr. Mayrhofer, and those of your readers who may be interested, may know my method of filling the root after it is sterilized, and I use the word *sterilized* advisedly, I will quote from the chapter on "Filling Root Canals" in my recent work on "Modern Dental Materia Medica, Pharmacology and Therapeutics." The Eucapercha Compound mentioned in the chapter is a solid preparation, melting at body temperature (98.6° F.), and made by dissolving white base plate gutta-percha in Eucalyptol Compound. The formula for the latter follows:

Menthol.....gr. ij  
Thymol.....gr. iiij  
Eucalyptol.....f. oz. j-m  
Sig. use where directed.

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The thymolized calcium phosphate is 2 per cent. of thymol incorporated in purified precipitated calcium phosphate.

There are so many different methods of filling root canals, and there seems to be such a variance of opinion as to the best method of performing this operation, that it is with a degree of hesitancy that the author attempts to discuss this subject. This operation stands as a sort of dividing line between the subjects of *therapeutics* and *operative dentistry* proper. In discussing this subject, the author will present the therapeutic aspect, and describe a method of procedure which has proved successful in his practice.

"It will be remembered that three factors were emphasized under the Removal of Pulp and the Subsequent Treatment, viz.:

1. Established and maintained asepsis.
2. Preserve the color of the tooth.
3. Thoroughly fill the canal.

"The author suggests filling all canals, which are large enough for a broach to enter, with gutta-percha in the manner which will be subsequently described. In connection with the preservation of the color of the tooth, it should be mentioned that *white base plate gutta-percha* should be used, especially for the purpose of dissolving in eucalyptol compound, making *eucapercha compound*. If this white substance is forced into the tubuli of the crown of the tooth, as it is liable to be, it will not change the color of the tooth-structure as would the pink gutta-percha. A great many dentists have been moistening the canal, previous to filling with gutta-percha, with *oil of eucalyptus*; and, as a result, much unnecessary pericementitis has followed this operation. If oil of eucalyptus is used at all, the refined oil only should be selected; and far more satisfactory results will follow the use of *eucalyptol*, the most volatile constituent of oil of eucalyptus. While eucalyptol is irritating, it is not nearly so much so as is oil of eucalyptus. The author suggests modifying the irritating property of eucalyptol and enhancing its antiseptic power by combining menthol and thymol, as suggested in the prescription above.

"In this proportion the agents added do not interfere with the solvent power of eucalyptol for gutta-percha; but if the proportions are increased to any appreciable extent, this does not hold true.

"In filling root canals it is always the safest practice to adjust the rubber dam, for asepsis must be established and maintained. The same agents can be used for sterilizing the teeth after the dam is adjusted, as were described in removing pulps by the anesthetization method. The canals should be aseptic before the operation is attempted. If there is any doubt in this regard, the operation should be deferred until the canals are in such a condition.

**Filling  
Large Canals**

“In filling large canals, especially those in connection with which abscesses have been treated, where the apex is large and where we ought not to expect to get a response from the patient when the gutta-percha cone reaches the apex, on account of the resorption in the apical area, it is best to measure the canal and then use one cone which approximately fits the canal rather than to use two or three smaller cones with the possibility of forcing one through the apex and into the apical area. There is almost as much danger of forcing the root filling too far in large canals, as there is in not forcing it far enough in small canals. To measure the canals, cotton can be tightly wrapped around a smooth, sterile broach and inserted. When by repeated trials the cotton fits the canal, a cone can be made of white baseplate gutta-percha, which is slightly smaller than the tightly wrapped cotton. The canal should now be moistened with eucapercha compound, working the latter up or down into the canals with a fine smooth broach, exhausting the air. If cotton is wrapped around the broach used for this latter purpose, only a few shreds should be used; for we should avoid making a piston out of the broach and thus defeating the means of exhausting the air. This accomplished, the cone can be slowly and gently pressed to place. In filling large canals from which live pulps have recently been removed, the patient will generally flinch before the cone reaches the apex. When this occurs, we should wait a few moments, when the cone can be gently pressed much farther without causing the patient to flinch a second time. If these precautions are observed, they will be the means of preventing much of the pericementitis following the filling of root canals.

**Filling  
Small Canals**

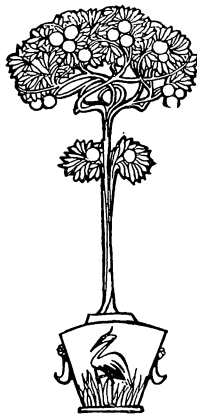
“In filling all canals where we can enter nicely with a smooth broach, it is best to follow the technic outlined above, using a cone which will enter the canal. However much we may regret it, there are canals, especially in the molar teeth, so small and tortuous that even a fine, smooth broach will not enter, at least to any depth. It is useless to try to fill such canals with a gutta-percha cone. The methods of enlarging the canals by the use of acids and caustics, as referred to in connection with the destruction of pulp tissue in such canals, can be employed; but it is not always advisable to enlarge them sufficiently to admit a small cone. After the larger canal or canals in a multi-rooted tooth are filled in the ordinary manner, the smaller ones can be moistened with eucapercha compound, and this worked up or down into the canal. This process should be kept up for some time. The sides of the pulp chamber can now be moistened with eucalyptol compound and a piece of baseplate gutta-

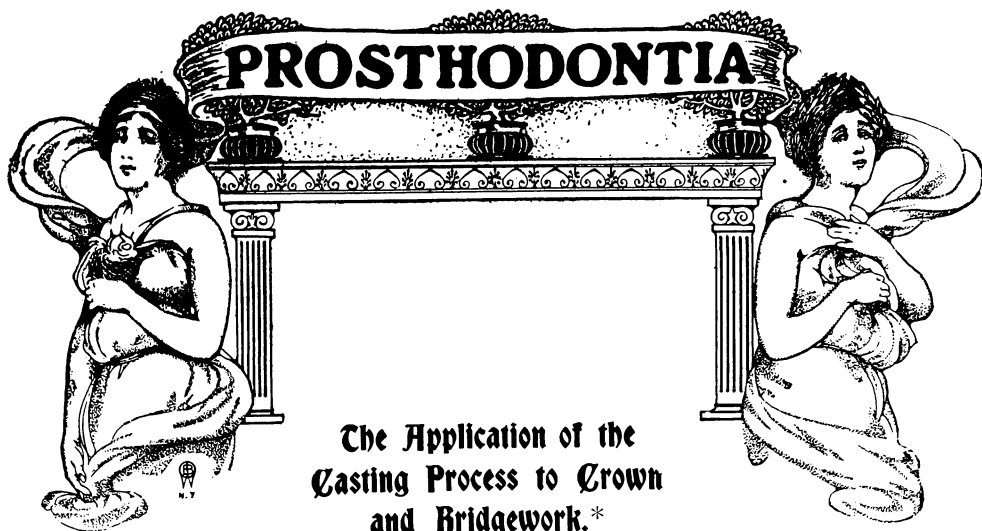
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percha, selected and softened in the flame, can be packed into the pulp chamber, when pressure can be made toward the small canals and the plastic gutta-percha forced into them. This is much better practice than simply filling the mouth of the canal with a gutta-percha cone. If the canal is so small and tortuous that even a small broach will not enter, and if it can not be enlarged by the use of acids or caustics, as referred to previously, it is good practice to make a paste of formocresol and thymolized calcium phosphate, placing the paste over the mouth of the canal, and, after working it up or down as best we can, covering it with cement."

As previously mentioned, there are many methods of filling root canals by which good results are attained. The method here outlined has served the author well. In closing, I desire to say that no reasonable amount of time should be considered lost in the treatment of teeth preparatory to the insertion of the final root-canal filling.

I hope that I have made myself clear in connection with the use of formocresol, and that the readers of *ITEMS OF INTEREST* may understand the method I follow in filling root canals.





By HART J. GOSLEE, B.S., D.D.S., Chicago, Ill.

### **Construction of Fixtures.**

When the type and number of attachments which are to be used for the purpose of anchoring removable bridges or partial dentures to the remaining natural teeth have been determined, and each attachment has first been made separately, it then becomes necessary to decide how the body of the structure which is to support the artificial teeth shall be constructed.

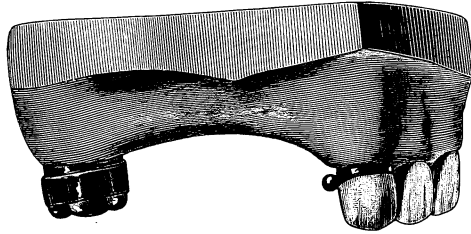
While vulcanite *alone* may be used for this purpose, *economy* is the one and only advantage to be derived from its use, and the best results, from the viewpoints of both strength and hygiene, are to be obtained by the use of gold, either in combination with vulcanite or alone, or of platinum in combination with porcelain.

In the casting process, coin, twenty-two-, or even twenty-karat, gold may be used for the structure, and the artificial teeth subsequently attached thereto with vulcanite. This is probably the most typical type of construction. In cases where any considerable amount of restoration *is not* demanded, however, ordinary replaceable porcelain crowns, bridge teeth, vulcanite, or diatoric teeth may be used by first molding the wax to the model and to the teeth, and then casting the entire body of the structure

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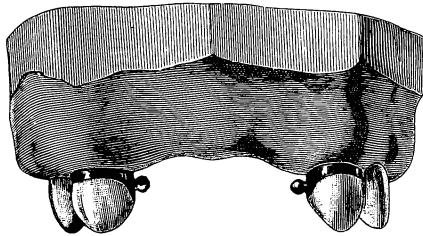
and subsequently cementing the teeth to this, thus using no vulcanite and avoiding the danger of casting directly to the porcelain. Or, where considerable restoration is demanded, and where the cosmetic requirements indicate porcelain, an alloy of five or ten per cent. of platinum in pure gold may be used in casting the base, and the teeth afterward soldered to this with pure gold. The restoration may then be made with low-fusing



**FIG. 488.**

bodies and gum enamels, being sure to use those which fuse below the melting-point of pure gold, such as Jenkins' "Prosthetic," Brewster's, etc.

Perhaps the most simple, typical and universally applicable type of construction is indicated in supplying teeth on one side of the arch only (Fig. 488), or in small anterior cases (Fig. 489), and consists in making a gold saddle



**FIG. 489.**

and attaching the artificial teeth to it by means of vulcanite, which may be done by casting, with accuracy and facility, without dies, counter-dies or swaging, and with a degree of certainty measured only by the operator's skill.

In this procedure the completed crowns or inlays, together with the removable parts of the attachments used therewith, should be placed in position in the mouth, and a good impression obtained in plaster and a

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model then made of a good, smooth investment compound. When the latter, with the attachments in place, has been obtained, it should first be properly treated to prevent the wax from sticking to it. Varnishing with shellac and then with sandarac, and, when these have dried thoroughly, with glycerine or thin oil, will usually answer this purpose nicely. Or, as a means of affording a close adaptation and a smooth surface, and pre-

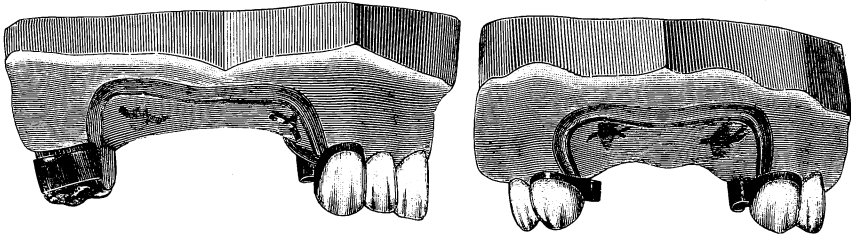


FIG. 490.

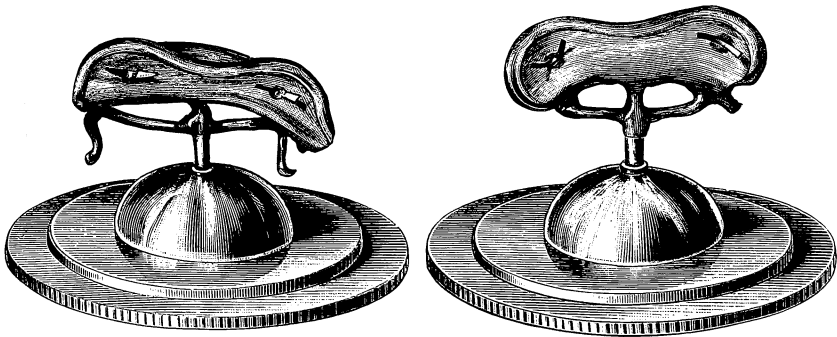


FIG. 491.

venting the wax from adhering to the model, No. 4 gold-foil may first be trimmed and burnished over the working surface, and this subsequently invested with wax.

The wax saddle or base should now be formed to the model and trimmed to the desired outline. This may be accomplished by using the thinnest possible form of sheet wax especially prepared for this purpose, such as is made by Ash & Sons, or ordinary baseplate wax, rolled out thinner. The saddle may also be made by first melting a hard wax, such as is used in inlay work, in a spoon or other suitable vessel, and painting it on the model with a brush until the desired outline and thickness obtains.

In the use of the thin sheet wax, which is regarded as best, however, it is always well to stiffen it with a bead of melted *hard* wax here and there, as a means of precluding the possibility of any change of form in removing the case from the model, or in subsequently investing it.

When the proper outline and thickness are thus obtained by either of these means, provision for the subsequent attachment of the vulcanite should also be made, either in the wax or by sticking small scraps of gold or platinum plate or wire into the wax, allowing the surplus ends to be exposed. (Fig. 490.)

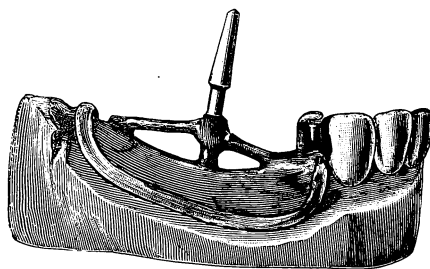


FIG. 492.

## **Investing and Casting.**

When all of these requirements and precautions have been observed, the case is now ready for the attachment of the sprue-wire and for investing and casting.

In this connection the successful casting of large pieces depends, first, upon the manner in which the sprue-wire is attached, and upon the formation of a sufficient number of channels leading from it and extending to all parts of the mold, which procedure is usually advisable when the piece is larger than for two teeth, in order that the fluid metal may reach every part of the mold before it begins to cool; second, upon properly and thoroughly heating up and burning out the wax; and, third, upon the use of as much *surplus* metal as the size of the crucible will conveniently accommodate.

If these precautions, together with the use of a *clean ingot of a good grade of metal in each casting*, are observed, there seems to be no limit to the size of the piece which may be successfully cast, except, perhaps, the size of the flask and of the machine to accommodate it; and the percentage of failures will be reduced to a minimum in proportion as these features of correct technique and careful detail are developed, and minutely and painstakingly executed.

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The method of attaching the sprue-wire and the manner of making provision for the formation of channels, which is done with a small roll of wax about the same size as the sprue-wire, are illustrated in Fig. 491.

If it is desirable to cast directly to or "*pick up*" the removable part of an attachment, or a clasp, and thus have it become an integral part of the casting, such parts should first be loosened and detached from the model, and a small extension of wire or clasp-metal sufficient to insure strength in their subsequent attachment to the casting soldered to them with a high grade of solder, after which they may be replaced in position on the model and waxed up and removed with the base, prior to investing.

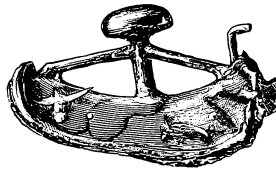


FIG. 493.

Or, if it may seem preferable to first cast the base and subsequently attach such pieces with solder, the wax may be molded and carved to fit closely to and around them, as illustrated in the case of a Roach attachment in Fig. 492. When the piece has been cast (Fig. 493), and finished, the relation between them may be sustained with hard wax, when the whole can be removed from the model, invested and soldered in the ordinary manner; or, if the model has been made of investment material, the soldering may, of course, be done directly upon it, without removing the parts, which is regarded as the best procedure.

In the former method, however, the model may be preserved for the subsequent attachment of the wax "bite," which should have been obtained just previous to the taking of the impression.

*(To be continued.)*

## Replacing Fractured Facings of Bicuspid and Molars on Fixed Bridges by Casting Gold Facings.

By B. I. NORWOOD, D.D.S., Chicago, Ill.

Let us consider in this case a bridge extending from the right upper cuspid to the left second molar, cuspids and second molar abutments. The facing of the second bicuspid or first molar has been fractured (Fig. 1). You will at once recognize the fact that to remove this bridge for the

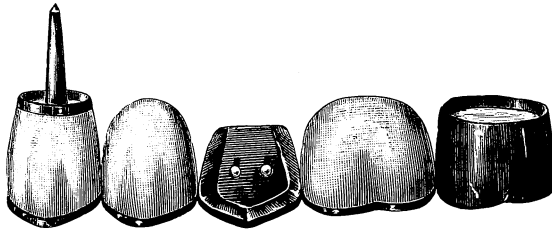


FIG. 1.

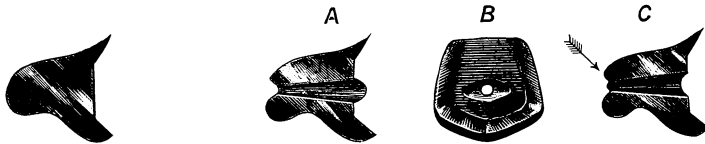


FIG. 2.

FIG. 3.

replacement of the fractured facing would not only necessitate the possible destruction of the abutments, but at the same time would make it very disagreeable for the patient as well as somewhat of a task for the operator. Often, also, it is objectionable to a patient to be without teeth for the length of time necessary to make this repair.

These facts being true, I offer the following suggestion: With a small stone grind the pins which have been left from the facing, down flush to the backing (Fig. 2), then with a drill about the size of a 16-gauge wire, drill through horizontally from the center of the buccal side to the lingual side of the bridge (Fig. 3A); then, with a cross-cut bur proceed to enlarge the hole horizontally on the buccal side to somewhat of a flat oval shape (Fig. 3B), letting this opening taper bucco-lingually, so as to form a cone-shaped opening (Fig. 3A). When you have this opening the

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desired shape, with a small cone-shaped stone or carborundum point dress down the surface of the opening until perfectly smooth, to facilitate the easy withdrawal of the wax; next, with a cone-shaped bur proceed to slightly bevel this opening at the lingual side (Fig. 3C); then take a piece of pure gold wire, 16-gauge, about three-eighths of an inch long, and with a cone-shaped bur drill perpendicularly into one end of the wire, forming a cone-shaped indentation in the end of the wire about one-sixteenth of an inch deep (Fig. 4A and B); then, starting from the other end of the wire, cut with a knife-edged stone several serrations crosswise



FIG. 4.

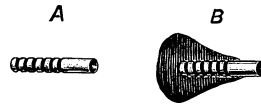


FIG. 5.



FIG. 6.

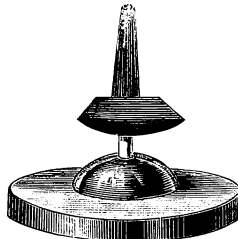


FIG. 7.



FIG. 8.

of the pin extending down about two-thirds of the length of the pin (Fig. 5A) for anchorage of the cast metal on the pin. On this end of the pin form your wax in a cone-shaped bulb (Fig. 5B) extending down onto the pin as far as the serrations go; warm your wax, and when sufficiently warm press to place, permitting the pin to extend through to the lingual side of the bridge so that the bottom of the indentation in the end of the pin comes about flush with the lingual side of the bridge (Fig. 6); chill your wax with a spray of cold water, and then with a flat-beaked instrument, such as is used in manipulating the wax in ordinary inlay work, dress down the wax to the size and contour of the facing you wish to replace, making sure to extend the wax well up onto the gum tissue corresponding with the length of the adjacent facings, bearing in mind that in order to get a perfect casting and adaptation, a perfect wax model is absolutely essential.

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After you have the wax formed to the proper requirements and the margins nicely dressed, with a flat-beaked instrument press on the end of the wire on the lingual side, removing the pin and wax in a body; mount for casting on sprue-wire, attaching the sprue-wire about the center of the buccal side of the wax model (Fig. 7); invest and cast in the usual way, using 22k. gold, so as to have the cast-facing the same color as the

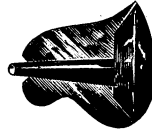


FIG. 9.

gold structure of the bridge. I advocate casting onto a piece of pure gold wire instead of casting pin and gold facing in one piece, for the reason that it is softer and therefore easier to rivet; it also affords a solid part to grasp with the pliers, preventing the possibility of distorting the wax model during the process of mounting on sprue-wire. After casting, dress down and fit to place. After fitting and burnishing the margins,

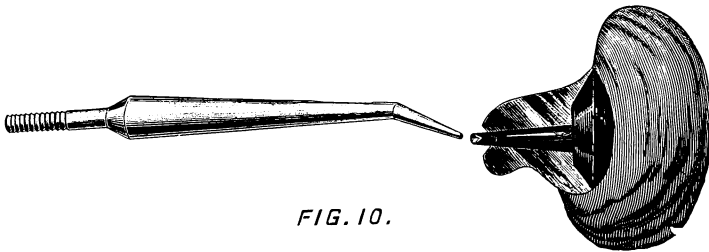


FIG. 10.

remove it, and with a knife-edged stone cut several serrations around or crosswise of the pin for anchorage in the cement for the final setting (Fig. 8); carefully dry all parts and cement to place (Fig. 9). (I would suggest "brown" colored cement for this particular purpose, it being nearer the color of gold, and hence would not be as conspicuous as "white" cement should there not be a perfect adaptation of the parts.)

After the cement has thoroughly set, take a piece of modeling compound, which will make a bulb about the size of a small hen's egg, warm so that it will be applicable, and press onto the bridge on buccal side, covering the facing and including a generous portion of the bridge on each

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side of same, pressing it up snugly around the buccal side of the bridge and gum; then, with a spray of cold water chill the compound, thereby forming a hard mass to rivet against (Fig. 10); hold the compound firmly in this position, then with an automatic plugger proceed to rivet the pin on the lingual side (Fig. 10); the beveling of the edges previously made to the opening on the lingual side of the bridge, also the cone-shaped

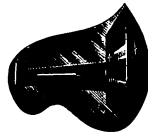


FIG. 11.

indentation previously made in the lingual end of the pin will then permit you to form a head on the pin, anchoring it securely and making it impossible to again be removed under the ordinary stress of mastication; when you have this firmly riveted, dress down with a small stone or sand-paper disk, and polishing with a cuttlefish disk in the usual way (Fig. 11). When this is complete, you will have, to all appearances, a gold dummy.

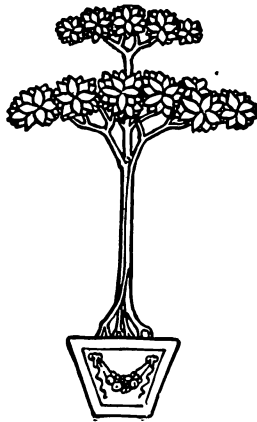


FIG. 12.

Where the gold dummy would be objectionable to the patient, and in cases where you can relieve the stress by *grinding the bridge* at this particular point, the repair may be made by preparing the bridge as previously outlined; then, select a facing the shade and shape the case may require, and with a pair of flat-beaked pliers bend the pins together and slightly downward; disk off the pins (Fig. 12), then grind the facing to fit the space. When you have a perfect adaptation of the facing to the bridge, remove the facing; then solder to the pins of the facing a piece of 16-gauge pure gold wire about three-eighths of an inch long; then place the facing and pin back onto the bridge, cut the pin off on the lingual side, allowing it to project about one-thirty-second of an inch; remove the facing and drill into the end of the pin with a cone-shaped bur as before described; cut serrations crosswise of the pin, cement and rivet to place the same as in preceding method.

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I advocate this procedure and the use of the gold dummy for this reason: there is most likely but one cause for the fracture, provide the facing was not checked during the construction of the bridge, or by springing the bridge at the time of setting; too much stress has been brought upon this particular portion of the bridge, and if the conditions are not such as to permit grinding the *bridge* sufficiently to relieve this stress, we would have the same conditions as before and subject to the same chance of fracture, unless we grind the occlusal surface of the opposing tooth or teeth. The grinding of the bridge would not be detrimental to the patient, but the grinding of a good healthy opposing tooth is not usually "good" dentistry to the conscientious practitioner, and is only a speedy completion of faulty and unscrupulous workmanship; therefore the use of the gold dummy is most preferable; then the grinding necessary to relieve the stress of mastication can *all* be done on the bridge.





### Discussion of Dr. Waugh's Paper.

**Dr. S. Merrell Weeks,**  
Philadelphia.

The value of the paper to which we have just listened is, I believe, very great. The influence of that paper will be much greater than we shall appreciate until we have made a much more careful study of it than the time at our disposal has enabled us to do. It is of particular interest to me, because you will remember that for several years—in fact, almost the entire time I have been engaged in the practice of orthodontia—I have been much interested in the relation between the temporomandibular articulation, and the antagonization of the teeth. Much has been done in the past four or five years to enlighten us in this line. The paper we have just listened to will do much to lessen the obscurity with reference to these relations.

The essayist, in summing up, says the contact between the upper and lower teeth is governed by the temporomandibular articulation. This does not coincide entirely with my interpretation of those conditions. I have stated, and I believe, that the occlusion of the teeth—their antagonization—the different conditions brought about by mouth-breathing, the abnormal conditions, habits of thumb-sucking, etc., are factors in forming or determining the formation of the glenoid fossa. The essayist says that the glenoid fossa is a mere depression. I would take exception to that. It is, perhaps, at one time a mere depression in early life. The slight depth of this depression in early life allows the condyle to rest in the glenoid fossa in one of many different places; the occlusion of the teeth, habits, etc., may influence those positions, but as the forma-

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tion of the glenoid fossa proceeds during the life history, that formation is dependent on these principles; the occlusion of the teeth, if it be of one character, will cause the formation of the joint in one way, and if of another character, in another way. The growth of the joint is along the line of the least resistance: growth of bone takes place more rapidly—as is proven by the character of the bone—where the pressure is the least. Where the condyle rests longest, therefore, we would have the least development and, therefore, the deepest portion of the glenoid fossa. It is with reference to those cases where the joint has been formed gradually and definitely, as influencing the retention of the teeth where they have been moved by orthodontic procedures in a comparatively short time, that I principally wish to ask your attention. While I am confident that the several conditions which I have mentioned are responsible for the formation of the glenoid fossa during the early years of the child, I also believe that many cases of retention failures could be traced to the adverse influence of the temporomandibular articulation after it has reached its full development. Were we sufficiently familiar with the relation of action existing between this joint and the occlusion of the teeth, I am sure that a careful study and application of the principles set forth by the essayist will help us to avoid many of these pitfalls.

I wish to express my appreciation to Dr. Waugh for the work he has done and the foundation he has given us to work on, but I feel that I can not discuss the subject satisfactorily until I have time to try in practice the principles he has advanced.

**Dr. Ernest Walker,**  
**New Orleans.**

I think we have just listened to a very scholarly paper, one well worthy of study by all of us. There is much of value in it, and, at the same time, there are a few errors I believe. For instance, it was stated, or illustrated at least, if not stated, that the compensating curve of Spee does exist, and it was demonstrated with artificial teeth. That, perhaps, left the impression that in the natural teeth the compensating curve of Spee would be operative, which is not the case. In artificial dentures it is important to provide for the compensating curve of Spee and to have the molars touch at the same time as the incisors do. Bonwill laid stress on the balancing, although the curve was not given by him because the condyle-path was horizontal in his articulator. Even in prosthodontia the perfect balance that may be produced is not of just the same importance in the mouth as it would appear to be when operating out of the mouth, for the reason that in the case of the artificial teeth we are not engaged in moving the teeth about with nothing between them, and when a bolus of food is put between the incisors, even though we have the curve of Spee, the balancing is at once lost till the

## ORTHODONTIA

bolus is cut through ; it being inoperative at the very time it is most needed. Until the contact you will not get the balancing in the molars ; still the curve should be given. The same thing applies to the lateral compensating curve. A bolus of food would destroy the balancing on the opposite side. The presentation did not quite give the correct impression, in that the illustration would make us believe that we have the balancing occlusion in the natural teeth on one side to balance the teeth and function on the other : that the buccal of the lower would come in contact with the lingual of the upper on the opposite side from that on which they function. This is an error. You will not find the forward or lateral balance in one per cent. of the natural cases, although it is important to produce it in the case of artificial teeth. In the nineties I read a paper before the American Medical Association touching upon this subject. I believe that a full study of the matter would lead to much benefit in the treatment of the pathology of the pericementum, as well as in orthodontia. I still believe that to be true, but my innermost feeling on the subject is not so enthusiastic as it was at that time, because, as I say, these balancings do not occur in the mouth and because Dr. Weeks is right in stating that it is not a fact that the shape of the path of the condyle decides the position of the teeth primarily. The bones, hard as they are, and which would not easily be penetrated with nerves and arteries, are, nevertheless, penetrated, for the reason that the bones come last ; the arteries and nerves were there first and the bones were formed around them. The final growth of the bone comes at a later date than the muscle, too, the bone and the joints are shaped and influenced by the functions they are put to. It applies likewise to the articulation under consideration.

We have in the deciduous denture very little of this compensating curve and very little descent of the condyle ; the glenoid fossa is almost horizontal, but it is not to say that it is that way because of the deciduous teeth. The deciduous teeth take their shape before they emerge from the bone, and the fossa is adapted to the function required of it. For it to be so that the condyle's path influences the formation of the teeth you would be obliged to have these influences operating when the primitive cusps were being formed. When the teeth come down then the length of the cusps influences the function which shapes the glenoid fossa. That is, speaking primarily. Secondly, however, if we straighten a set in which the fossa is already formed and in which there are enough teeth left in harmony with the shape of the condyles and glenoid fossa for the function to be continued as established, should we leave one or two teeth out of harmony the one or two teeth will have to give way. Therefore, the path of the condyle, although influenced by the sum total of the teeth, will change the position of one or two teeth which are out of

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harmony. This is a matter of great practical importance to us as orthodontists. We must, without underrating the importance of occlusion, give more attention, I believe, to articulation; to the position of teeth in function than some of us have done. In that connection I would like to exhibit a new form of cast. I say new because it has not been before this Society. I designed it in 1907 in New Orleans, and have shown it to other societies. With the old form of backward extension we could not view the casts from the back, while here we can see the teeth from the lingual aspect. [Models exhibited.] In treating a case I take bites from time to time in modeling compound to study the occlusion from the lingual, as well as the buccal, aspect, and can thus the better watch the progress of treatment. The final articulation can be gotten in the mouth itself in orthodontia. Bear in mind the fact which I have stated, that the lingual cusps are of importance in occlusion, but in articulation they are very seldom in function. If you put the buccal cusps together on one side you find the lingual are not touching, and no teeth are touching on the other side, but in occlusion you must consider every cusp. They separate in grinding because the buccal cusps of the lower are so much higher than the lingual, and the reverse with the uppers. In studying the grinding function in the mouth, after the occlusion itself is correct, the method of the prosthodontist of using a thin piece of carbon paper, often detects some point touching that should not touch.

A study of this subject of the position of antagonism in the functioning of the jaw emphasizes the importance of correcting each individual tooth in the bicuspid and molar region. A good many finished cases are illustrated in which the bicuspids and molars are not all properly arranged, and one reason why they get out of position later is because of their not being properly articulated.

**Dr. Fiederspiel,  
Milwaukee.**

About two years ago, before the Wisconsin State Dental Society, I read a paper on mouth-breathing, its influence on the dental arches and jaws, and demonstrated how the physiological development of the mandible and glenoid fossa can be altered by the inequality of muscular action due to nasal stenosis. Since that time I have made quite a number of dissections of infant cadavers and I was surprised to find that the glenoid fossa was comparatively shallow and undeveloped. I have been following this matter up very closely, and I hope at a later period to demonstrate that a knowledge of the development of the glenoid fossa would play an important part in the correction of mouth deformities.

In this connection I will show on the screen the profile of a patient suffering from Class II, Division 1 (Fig. 1). The patient is fifteen years of age and has a history of nasal stenosis, hypertrophy of turbinate

bones, adenoids and enlarged tonsils. The patient was anemic and poorly developed. In correcting this case I obtained a normal relation of the upper and lower teeth when the mandible was voluntarily brought forward, and thereby obtained great improvement in the facial lines, as illustrated in the next picture (Fig. 2). But I found it almost impossible to retain the teeth in that position because the glenoid fossa had developed in an abnormal position due to inequality of muscular action, and for that reason the mandible had a tendency to drift distally because it was impossible for the condyles to rest on the eminentia articularis.



FIG. 1.

FIG. 2.

For that reason, I am confident that when I attempt to correct Class II abnormalities, after the alveolar processes and jaws had developed and after the muscles become stronger and more set, that the treatment, notwithstanding the use of modern retainers, would in most cases prove futile. I have come to believe that if these cases of abnormalities were treated during the time when the dental areas were developing that it would be an easier matter to permanently correct the deformities.

I have had very great pleasure in hearing this paper, because, just as I said when I heard Dr. Hawley's paper at St. Louis, I thought, it marked the beginning of a new era of treatment by enabling us to determine the

**Dr. Ottolengui.**

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occlusal or normal curve of the arch, so I believe we are now beginning seriously to seek for a means of determining the normal occlusal planes of the teeth, and with that knowledge we will later on find a way of establishing those planes. It has also been my feeling, as most of you know, that in those special cases of Class II, in which some of my friends believe there is a supra-occlusion of the lower incisors, there is not really a supra-occlusion of the lower incisors, but the patient is suffering from a lack of vertical development of the molars and bicuspid.



FIG. 3.



FIG. 4.

I will consider the matter of Dr. Waugh's paper for a moment as I understand it, and as the first two gentlemen discussed it, Drs. Walker and Weeks. I agree with what they said, but I do not think Dr. Waugh said the path of the condyle controls the occlusal plane of the teeth, but that it registers it. That is a very great difference. I believe the truth is that they are independent, and that they are developed to meet the requirements of the individual. If, for any reason, there is a lack of vertical development of the molars and bicuspid, the lower arch and mandible will remain in an abnormal position, and the glenoid fossa will form around the head of the condyle, and if untreated that relation may be permanently established. In treatment, so far as the mandible is concerned, you will either be compelled to rearrange the occlusion by moving the lower teeth forward through the process, leaving the chin where it is, and leaving the glenoid fossa unaltered, or else you must rearrange the glenoid fossa by resorption. While Dr. Cryer proved such resorption to be a possibility, we have no knowledge to prove that his case did not require some forty years or longer in its accomplishment, and that is rather long for orthodontic treatment. Therefore, if we really wish to properly treat these Class II cases we should get them as early as possible, and we should realize that we are not simply to work for a proper arrangement of the

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teeth, but that we shall retain that arrangement and position of the mandible until permanency shall be attained by the formation of the glenoid fossa over that condyle in the position in which you want the mandible to be maintained.

I think these articulators may be of immense benefit to us in this way; if we can make study casts in the beginning and establish the true relation on these articulators, taking it for granted that they are accurate,

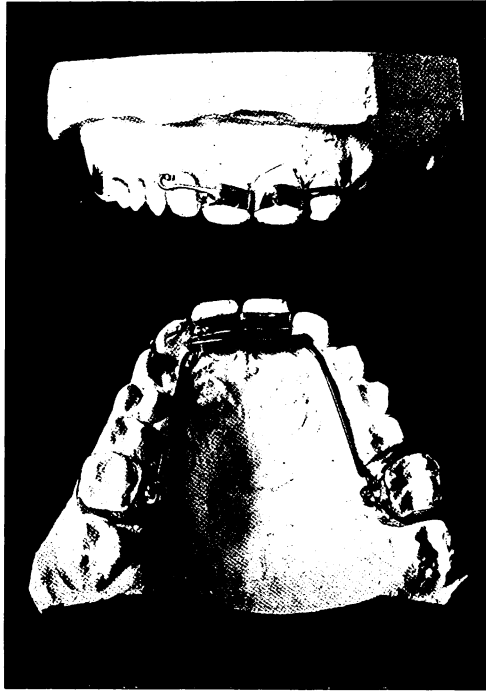


FIG. 5.

and so get the condyle-path we will register at the moment the condyle-path which agrees with the teeth as they are, and this will also indicate to us, I think, too great an open bite in the molar region when the incisors are in contact. That will show us how much to elevate the molars and bicusps of the lower jaw. If we can elevate them sufficiently we will also, by establishing the normal plane, prevent a distal return of that mandible, and to that extent help in the formation of a glenoid fossa, which will retain the mandible in the position desired.

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Fortunately I have with me models illustrating infra-occlusion of the lateral halves. Fig. 3, is a case where it was necessary to rearrange the whole occlusal plane.

Fig. 4 illustrates the condition of the bite after the application of the apparatus and before the vertical development had taken place.

Fig. 5 illustrates an apparatus worn on the upper arch, by means of which the infra-occlusion was corrected.

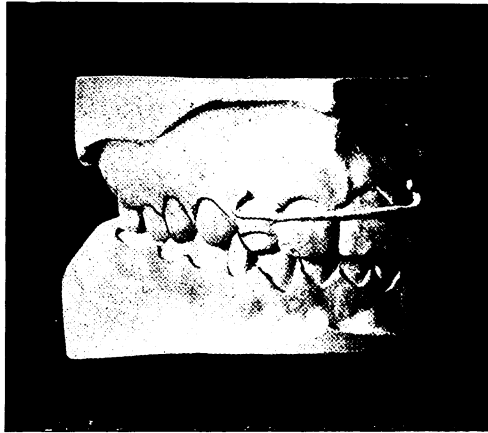


FIG. 6.

Fig. 6 illustrates the same model after the molars and bicuspid had almost come into occlusion. The molars were brought into their occlusal relation by means of small intermaxillary elastics applied to hooks, soldered to bands on each molar. I think this illustrates the principle under discussion to-day.

With the removal of this apparatus I find that the patient has no tendency to bite back into the old position.

I once saw a case in Dr. Ottolengui's office. It was a pleasure to me to note that the child could not bite back into the old position without great discomfort, which seems to show that a change in the glenoid fossa must certainly have taken place.

In listening to the discussion of Drs. Weeks and Walker I could not make up my mind as to whether they tried to emphasize the points I brought out, or were trying to contradict them. If Dr. Weeks intended to refute anything I said I most assuredly feel he failed to do so.

**Dr. Waugh.**

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We talk of the change of the condyle-path with advancing years. Here is a picture from "Turner's Prosthetic Dentistry" that I chanced to bring. It is a case of the "Lymphatic Temperament." We see a compensating curve there. The teeth are worn down, the cusps being obliterated (Fig. 7).

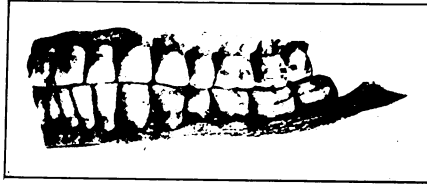


FIG. 7.

For every-day work we must have apparatus which will reproduce with sufficient accuracy the anatomical relations of the alveolar ridges to the joint and the pitch of the condyle-path for practical purposes. We can not reproduce it absolutely; that would require too much time.

The discussion of the gentlemen who criticised and commented on



FIG. 8.

the shape of the glenoid cavity and its influence in controlling the movements of the mandible, considered those parts as we see them in the museums in the dried specimens. We want to reproduce these relations as they are in the living subject. In Fig. 8 we have the head of the condyle in the glenoid cavity. It is just bone.

In Fig. 9 we have the living specimen, and the condyle does not fit closely to the cavity. Note the relation of the head of the condyle to

the temporal bone. The inarticular cartilage with the two synovial sacs interred. Dr. Walker said that in prosthodontia we want a balancing contact, yet we do not need that with the natural teeth. I said in the paper that normal occlusion is an ideal. I do not mean to detract in anything I say from the value of normal occlusion. In how many skulls of the thousands examined have the comparative anatomists found normal occlusion? It is, however, the ideal toward which we should work. Because Dr. Walker is not quite so enthusiastic to-day about the value of this as he was in 1890 should not militate against our taking it up and

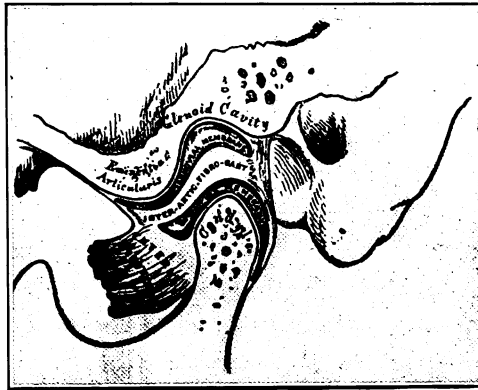


FIG. 9.

studying it. He knows so much about it from his original studies that to him it may seem common, but he should not discourage us in the development study and development of this most practical consideration. There is surely an opportunity by following this up to make our work easier and more efficient.

I omitted to speak of the face-bow in discussing Dr. Walker. Dr. Waugh's paper. I think that fills a long-felt want. Some of the measurements secured by it were such as could not be had by my method. I wanted to ask Dr. Waugh in closing if he could give us the date of publication of Dr. Hayes's work. We have all the other dates in his paper, with the exception of that one, and it would help us to be able to read Dr. Hayes's work.



## Control of Forces Employed in Tooth Movement.

By FREDERICK C. KEMPLE, D.D.S.

*Read before the Central Dental Association of Northern New Jersey,  
December 20, 1909.*

A few of the changes which have marked the progress of dentistry during the past twenty years have been almost revolutionary in character. During this time a multitude of innovations have been introduced and thoroughly tested by members of the profession who are desirous of giving their patients the benefit of every possible improvement in the care of their teeth. Out of this multitude of promising new ideas, or new methods, only a few have endured for continued use, and these few have seldom yielded the full fruit of their promise. They can be adopted for general practice, as a rule, only after being considerably modified and their field of application much reduced.

The results obtained by the successful treatment of many cases of malocclusion have given to it a permanently established place, both in general practice and as a specialty of dentistry.

The enthusiasm with which this branch of dentistry is being studied and practiced at the present time by a large number in the profession must inevitably result, within a few years, in a greatly increased knowledge of the subject. The most intricate problems are usually soon solved when many minds are concentrated in the effort. Each failure must teach its valuable and lasting lesson and there must be many before the serious difficulties, which now obstruct the way to successful treatment of malocclusion, disappear.

A great oculist, upon being congratulated for his remarkable skill in performing a certain delicate operation, remarked: "Yes, this one was all right, but I spoiled a bucket-full of eyes learning how to do it." All great accomplishments require as compensation great sacrifice, and it must be so in orthodontia.

Enthusiasm in the practice of any branch of dentistry, unless seasoned with conservative judgment, must surely be more or less detrimental to the welfare of the patient.

The zeal with which orthodontia is being practiced to-day, however, gives promise of splendid progress for the future. If, in the end, the problems are all solved and we can, ten years hence, take up any case of malocclusion with assurance of success in the treatment, the benefits will probably more than compensate the sacrifice.

At a recent meeting of the Second District Dental Society, in Brooklyn, Dr. Ottolengui read a paper in which he urged the necessity of

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accurately diagnosing the conditions to be dealt with before beginning treatment. It was a most timely paper.

The subject for the present paper was selected because, in importance, it is second only to diagnosis.

First, know definitely just what tooth movement a given case requires, and, second, know as definitely as possible—for in many cases it is impossible to absolutely know—what form of anchorage and what force can be utilized and controlled to accomplish such movement.

### **Continuous and Intermittent Force.**

The manner of applying force for moving teeth is a question left to the individual choice of the operator. Screw force has been the medium through which Dr. Farrar has accomplished his great amount of work, while Dr. Jackson has confined himself almost exclusively to elastics.

The screw, undoubtedly, has the advantage of being under control of the operator, and in unskilful hands is not so likely to do injury as is the injudicious use of elastic force. But elastic force, aside from "moving the teeth in accordance with the physiological functions of the tissues," has, when used with discretion, the great advantage of being continuously active for a considerable period of time, which removes the necessity of frequent visits required when the screw alone is utilized.

Most of the experienced careful operators, therefore, turn the advantages of both methods to their purpose, and through intelligent care and thoroughness eliminate to as great a degree as possible the dangers of each.

### **Anchorage.**

The different forms of anchorage employed in moving teeth have been conveniently classified by Dr. Angle as simple, stationary, reciprocal, occipital and occlusal. They are briefly defined as follows:

A simple anchorage is one in which the form of attachment to the anchor tooth admits of the anchor tooth being tipped in its socket when force is applied.

In stationary anchorage a rigid attachment is made to the anchor tooth which, as nearly as possible, prevents its tipping. If it is displaced, it must be moved bodily through the alveolar process.

Reciprocal anchorage is the pitting of one malposed tooth against another in such a manner that, when force is applied, the tendency is to move both teeth into proper occlusion.

The word "reciprocal" as here used does not mean equally resistant to the force applied. Usually one of the teeth will move with much greater ease and more rapidity than the other. It would only be by

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rarest chance that two teeth could be found whose resistance to the moving force would be exactly equal or equally reciprocal.

In occipital anchorage the top and back of the head is utilized as the source of resistance. This is, perhaps, the only anchorage used in orthodontia that is not liable to displacement when force is applied.

Occlusal anchorage depends for resistance upon the force of occlusion of the antagonizing teeth.

Dr. Calvin S. Case describes what he terms "sustained anchorage" as one in which a single tooth, standing alone, is supported in such a way as to maintain its upright position. Such condition would be included under stationary anchorage.

To intelligently utilize these different forms of anchorage, either singly or in combination, for the purpose of directing force, it is important to know as much as possible about the character of the alveolar process involved. It is not only necessary to have a general knowledge of the relative density and the resistance offered by the alveolar process in its different parts, but it is well to consider carefully the character of the particular process upon which the work is being done. In selecting any anchorage from which to direct force, it must be borne in mind that positive fixity can not be obtained when only the teeth are employed as the source of resistance. Such anchorage, under the most favorable conditions, is movable only in a less degree than the tooth, or teeth, that it may be intended to move. When properly selected, any anchorage for moving teeth should be like the old story of the earth coming up to meet the apple as it falls. The displacement of the anchor should be so slight as to be almost imperceptible. If, however, the relative resistance offered by the alveolar process be not taken into account, several teeth may be pushed entirely out of place in the effort to move a single tooth. Very often this occurs through an endeavor on the part of the operator to use as little appliance in the mouth as possible. Such consideration for the appearance of the patient while having the teeth regulated may, in the end, be dearly purchased.

Newton's third law of motion is invulnerable and always active: "force must ever be exerted equally in opposite directions." This law that must be fully considered when reducing to the minimum the amount of appliance to be worn.

### **Etiology of Malocclusion.**

In spite of the advanced position it has taken, Dr. Ottolengui, in his paper referred to above, says that "modern orthodontia is probably still in a very primitive stage compared with future possibilities." Let us hope this prophecy may be true. But whether the future holds

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great possibilities or not, we must admit the present primitive stage. There exists to-day very little, if any, really positive knowledge as to the true etiology of some of the worst forms of malocclusion with which we have to deal. Nearly all that has been written about this branch of the subject in reference to certain forms of malocclusion is based upon such meagre theoretical reasoning that it becomes practically valueless when measured by the standard of true scientific investigation.

And, as to perfect control of the forces employed in tooth movement, it is the Utopian dream of every orthodontist. When this condition becomes a fact the difficulties of tooth movement will disappear, retention will be simple, and orthodontia will become the idealistic vocation that the inexperienced practitioner now imagines it to be.

It is not the purpose of this paper to discuss all the different forms of anchorage which may be employed when applying force for tooth movement; the intent is only to call attention to one or two points in connection with the expansion arch which may be of value to those present who are using this appliance.

### **The Expansion Arch.**

It is unreasonable to suppose that one system, or one method, may contain all that is good or desirable in orthodontia. Yet, the writer believes that the expansion arch, when properly used, has a wider field of application in producing and controlling a greater number of tooth movements than any other single appliance employed in present methods of treating malocclusion. It is not unusual, however, to find forms of malocclusion in which the bucco-lingual relation of the molars and bicuspid on one side of the mouth is normal, while on the opposite side the molars and bicuspid of either the upper or the lower jaw may require extensive movement in either the buccal or lingual direction. Such a condition demands that the relation of the teeth on the normal side of the mouth be undisturbed and all movement of the teeth be accomplished on the opposite side, a movement which is practically impossible with the expansion arch as ordinarily used.

By carefully ligating all the teeth on one side to the expansion arch to secure anchorage and moving one tooth at a time on the opposite side, it is possible to obtain somewhat more tooth movement on the one side than on the other. But this method, for several reasons, is unsatisfactory, one serious objection being the large number of ligatures required, which are a menace to the teeth, unless they receive constant care. It may safely be accepted as a rule in regulating that the fewer ligatures and bands there are used to accomplish the treatment, the better it is for the teeth. An-

other objection is the likelihood of disturbing the relation where the teeth are already in normal contact.

In order to establish a practically stationary anchorage of the teeth that are in normal relation and allow free movement of the teeth on the opposite side, there are several little devices which may be used on the expansion arch, any one of which eliminates both of the objections named above.

## **Moving Molars without Cipping.**

Dr. L. S. Lourie, of Chicago, first filed two flat surfaces near the end of the arch and, with heavy pliers, pinched the buccal tube, through which the arch passes, tightly against these flat surfaces. This made it impossible for the tube to turn on the arch, and thus it prevented the tooth, to which the band was attached, from tipping in its socket

Dr. Burt Abell, of Toledo, Ohio, accomplished the same purpose by using a buccal tube with an opening or slot extending its full length. Opposite this slot on the arch is soldered a little lug, which works tightly in the slot. This slot and lug has the advantage of allowing free mesial or distal movement of the arch through the tube.

Dr. R. Ottolengui improved upon the idea of Dr. Abell by having the lug soldered to a very small tube, which is threaded, and which can be screwed onto the arch and made fast at any point. This arrangement admits of very easy adjustment.

The writer has used with success in several cases a buccal tube with a square opening, or "bore," having a second smaller square tube that is attached to the end of the arch and which exactly telescopes in the square "bore" of the buccal tube. (See March issue, page 215.)

If accurately adjusted any one of the above devices, when used with a comparatively heavy rigid expansion arch, will so nearly establish a stationary anchorage that unilateral expansion can be obtained with little difficulty and without the use of ligatures.

In the treatment of extremely constricted upper dental arches stationary anchorage also offers advantages over the usual methods of expansion. Not only is the degree of outward tipping of the buccal teeth very much reduced, but the tendency to develop increased nasal capacity is without doubt increased.

In the employment of elastic force control may, in the majority of cases, be maintained by so adjusting the appliance that the elasticity will have spent itself by the time the desired movement is effected.

When rubber elastic bands are used, the strength of the pull may be closely gauged by selecting bands of suitable size. In many cases where rapid movement is desirable and extra force is resorted to for its accomplishment, the extent of movement may be regulated by placing a

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little lug or spur or hook in such a position on the moving tooth that when the desired position has been reached the spur or hook will engage some other part of the appliance and thus make further movement impossible.

Little devices of this nature are always suggested by the exigencies of the case under treatment; whether or not they are successfully met depends upon the judgment and ingenuity of the operator.

The "contour apparatus" employed by Dr. Case for moving the roots of teeth is a splendid illustration of ingenuity in establishing a control of force for tooth movement.

### Discussion of Dr. Kemple's Paper.

The subject of this paper, as I understand it, is the application of force, and Dr. Kemple has more specifically taken up the question of anchorage in relation to force so as to be able to control the tooth movement. There is one principle brought out in the paper to which I will allude again, because it is only by repetition that these facts become impressed on the mind. It is a principle which is very little appreciated by the general practitioner who occasionally dabbles in orthodontia, nor is it sufficiently appreciated by the most expert men in that special practice, and it is the immutable fact that force always expresses itself in two directions and equally.

We are very apt to concentrate our attention upon the tooth we desire to move, and forget that the force which we are using to move this tooth is likewise expressing itself against our anchorage. The only reason the result of this equal expression of force in two directions ever can be a greater movement in one direction than the other, is because resistance is seldom, if ever, equal, and with an equal expression of force in two directions there will be an unequal movement, the greater movement being in the direction of the least resistance.

Here is a point, for example, which very commonly comes in practice. Using the expansion arch with the buccal tubes we may desire to move some of the incisors of the lower jaw forward, and we tie ligatures to these lower teeth and *tighten up our nuts with the idea and intention of moving forward the central incisors*, and we do it if we apply the force properly. Possibly the very next case which comes in may be one in which temporary molars have been prematurely lost and the sixth-year molars may have drifted mesially, or may have become tilted in their sockets, and we desire to move those molars distally into normal positions. We make exactly the same application; we tie our arch to the same teeth

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and this time, because our mind is concentrated upon the molars and we wish to move the molars back, *we tighten up the nuts in order to move the molars back*, and, again, it can be done if the force is intelligently applied. But any man who has ever performed both of these operations, and performed them successfully, will thereafter remember one when he is doing the other; that is to say, he will realize when he is expressing force against central incisors that he is also expressing some force against the molars. Also, if he is doing the reverse, if the central and lateral incisors are where he wants them, he will be very careful how he turns the nuts to move the molars back.

The point of interest here is that both of these movements can be accomplished, but they can only be accomplished by so arranging the application of the force that the resistance is greatest where you wish the least motion.

Dr. Kemple very truly said that the most approved method in vogue to-day is to make use of both elastic force (and a spring is only a form of elastic force) and screw pressure. But this must be remembered, that in proportion as the arch is large or small so does the relation of these two forces differ. That is to say, if you are using a (16-gauge) heavy arch the elastic force is less than the screw, while if you are using a lighter arch (18 or 19-gauge) you are developing less force in your screw. Consequently, it is important in choosing what size arch you intend to use to determine in advance something about the anchorage. For example, here are two ways of applying force to the central incisors, if you wish to move the central incisors forward; you may use a very light arch and, setting it some distance from the tooth, the arch being light, have strength enough in your ligatures to tie your arch down into contact with the labial surface of your incisor teeth. In that way you are exerting the elastic force of the spring in the arch.

If, on the contrary, you are using a larger gauge of wire and set it in the same way, you would then be operating differently; the arch being more rigid and set some distance from the central incisors, you would be relying more upon the contraction of your ligatures, presuming that you are using silk ligatures, to move these teeth forward; and I believe, in many cases, it is a great deal safer to move incisors in that way. Then, by putting a small load on the arch, moving one or two teeth at a time, you exert very much less stress against your molars, and are that much less likely to disturb them.

Then, also, in such a procedure, if you start by ligaturing all four incisors to the arch, you then exert the greatest resistance of those four teeth against the molars; on the contrary, if you move one tooth at a time, as you loosen those teeth up in the sockets, you eventually succeed in softening the process, so that later you may safely tie to all four incisors.

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Conversely, if you desire to move the molars back it would be a great deal safer to tie to all the anterior teeth and utilize all the resistance of the process as an anchorage, which, in addition, should be reinforced if possible, in order to get a sufficiently strong resistance to enable you to exert the full force of your screw against the molars.

Let me refer to the appliances which Dr. Kemple has passed around. He has been altogether too modest here to-night; he has placed himself last in the list in making these appliances, whereas, I believe that his square tube was the first really successful device that accomplished this work. Dr. Lourie had the correct theory when he flattened his wire, but I do not think it would act in the mouth as certainly and positively as Dr. Kemple's square tube does.

In closing, let me say again, it is simply a question of realizing and never forgetting that all pressure is expressing itself in two directions, and that very movement is exactly in proportion to the resistance. Where you place the greatest resistance you will have the least movement—and remember there is a great deal of resistance in the bony process and, consequently, a tooth which has been moved and loosened up will afterward become a much lighter load for the arch.

There is really very little to say after the complete discussion of this paper by Dr. Ottolengui, but I will add this:

**Dr. Wilbur Daly.**  
**New York.**

The age of the patient should be taken into consideration because, the application of force to tooth movement at, for instance, the age of sixteen would be entirely different from that to be used at the age of sixty. I have been doing considerable of that work and have gone into the force of a spring and also the application of force by spring and nut and elastic pressure, and it has been very strongly brought to my mind as to the care and judgment that must be used in the application of force, particularly in moving the deciduous teeth, and making room for proper eruption of the permanent teeth. With that in mind, I might say this: Dr. Ottolengui mentioned the force exercised by the elasticity of a 16-gauge bar; I would also call attention to the fact that if you use a 19- or 20-gauge bar of the same kind and make you are getting an entirely different force.

Referring to Dr. Daly's remarks as to the force that should be applied in moving children's teeth, I did not touch on that subject particularly, because I thought we all realized the importance of handling the deciduous or the erupting teeth with comparatively light force. You certainly would not use the same force in moving teeth for a child of six years of age that

**Dr. Kemple.**



you would necessarily employ if you were moving the teeth for one of sixteen or twenty-six years of age.

Concerning the case which has been passed around, the appliance there used was a square buccal tube on the left side on the first permanent molar, and the other teeth. The first permanent molar and first and second deciduous molars were moved out into practically perfect relation, bucco-lingually, without disturbing the relation on the opposite side in the least. I had a round tube on one side. I put a band on the first molar with the screw of the band resting against the lingual surface of the second deciduous molar and I moved them all at one time. It is not necessary to employ ligatures in this way of moving the teeth; that is, in expanding the arch you do not need to have the first and second bicuspid ligated.

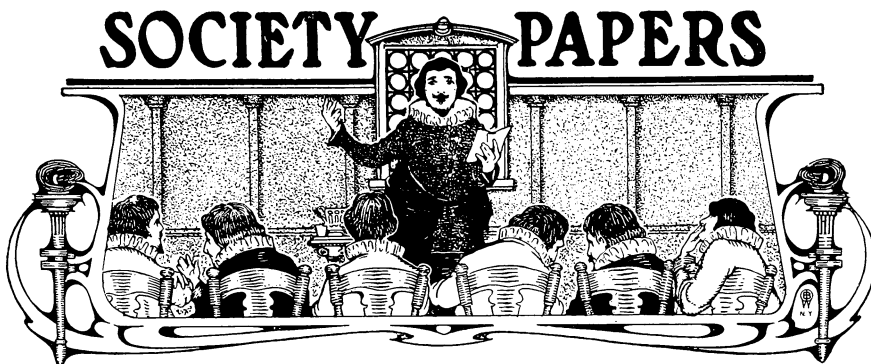
Just a word of caution concerning the use of any of these appliances. They must be adjusted with absolute accuracy in order to establish perfectly stationary anchorage. The square tube, the tube that telescopes into the buccal tube, must fit perfectly, for just in proportion as that square end of the expansion arch is allowed to move in the tube, just to that degree do you get movement of your anchored tooth and that is just what you want to avoid. The same applies to the device of Dr. Ottolengui; unless the lug fits tightly into the slot of the buccal tube, it will allow the tube to slightly turn on the arch and permit that much tipping movement in the anchored tooth.

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Replying to a question as to how long it took to move the teeth, Dr. Kemple said:

"In moving teeth I do not make any attempt at speed unless it is in an emergency case where the patient is going to sail for Europe in three months or something like that. But I should say, perhaps, in six months, those teeth were put in normal relation."





## **The Analysis of Dental Amalgam Alloys.**

DR. HENRY H. BOOM.

*Read before the Southern Dental Society, May 19, 1909.*

The longer a dentist practices his profession, the less in number becomes the instruments and appliances he uses, and the more familiar and dexterous he becomes with such as he continues to use.

With dental amalgam alloys, however, much of the knowledge he possesses must be imperfect if he depends, for information, solely upon the self-interested manufacturer or dealer anxious to sell his wares.

With the advantages for the making of amalgam alloy that the manufacturer possesses, the modern dentist would be unwise to attempt this work, but he may even with limited facilities ascertain the composition of such alloys as have proven of value to him, and detect and have corrected any errors or omissions in composition that would impair the results he would otherwise hope to obtain. In knowing how to analyze an amalgam alloy you need not, then, be entirely dependent upon your dealer's statements.

### **Components of Amalgam Alloys.**

Hodgen defines a dental amalgam alloy as "an alloy composed principally of silver and tin, with the addition of small percentages of one or more metals (which, when comminuted and mixed with mercury, forms a coherent mass).

The metals that it is customary to add to the all-important silver and tin are but very few and include copper, zinc, gold and platinum, with, very rarely, cadmium and antimony. These metals are added singly, or two, or at the most three of them, are added to the silver-tin combination, so as to constitute about one-half of one per cent. to five per cent. of the total weight of the amalgam alloy.

# **Method of Analysis.**

The analysis of such an alloy, to inform us of the presence or absence of metals which may be said to be present, irrespective of the quantities of such metals, may be performed in the following manner:

Reduce ten or fifteen grains of the alloy to as fine a powder as possible, using a mortar and pestle for this purpose, unless the alloy is finely comminuted. Place this fine powder in a beaker, adding about half an ounce of chemically pure nitric acid, and place the beaker and its contents on a hot plate (stove lid) until the fluid has almost entirely disappeared, through evaporation, and no further supply of yellow or orange fumes, indicative of chemical action, rise from the beaker.

Then nearly fill the beaker with pure water. The tin present in the alloy will have been changed by the acid used into insoluble tin-acid (metastannic hydroxid), and will be white in color if gold be absent. purple in color if gold be present, and should gold be absent and platinum present in considerable quantity (more than 2%), it will appear as black grains mixed with the white tin. The liquid in the beaker is now poured free from the insoluble tin; if this liquid has a greenish-blue color, copper was present in the alloy.

This liquid should now have added to it hydrochloric acid, by drops, when the curdy-white chlorid of silver forming shows the presence of silver in the original alloy. We continue adding hydrochloric acid as long as it occasions the formation of the white chlorid of silver; then, stirring the mixture, we warm it for a few minutes to secure its rapid settling; then filter or decant the liquid.

To this liquid we now add hydrogen sulphid solution, or gas; when copper or cadmium, if present, will appear as the insoluble sulphids of those metals, the cadmium sulphid being yellow, the copper sulphid black in color; and, should both be present, the black of the copper would, of course, mask the yellow color of the cadmium precipitate.

If, then, hydrogen sulphid caused a black precipitate to form, filter and wash the precipitate with diluted sulphuric acid; when, should cadmium have been present as the sulphid, it will dissolve and passing now as a clear liquid through the filter: it may be received in a clean vessel below and will form a white insoluble mass, if to this liquid we add caustic potash solution.

When, by the use of hydrogen sulphid, we caused the separation of copper and cadmium in insoluble forms in the liquid and removed these two metals by filtration, this liquid may still contain zinc which would form an insoluble white sulphid on adding sufficient ammonia to render the liquid alkaline, and freed from this precipitate of zinc sulphid by

## ITEMS OF INTEREST

filtering, the liquid, should there be platinum present, would give a white insoluble ammonia-chlorid of platinum when to it we added ammonium chlorid solution. For this entire work we would require a glass funnel, several cut filter papers, and two glass beakers. The solutions or reagents we would employ would include nitric, hydrochloric and sulphuric acids, liquor potassa, test solutions of hydrogen sulphid, ammonium hydrate, and ammonium chlorid.

The entire process need not require more than half an hour for its performance, and would give us positive assurance of the presence or absence of any particular metal constituent of an amalgam alloy in whose composition we were interested.

**Tests for  
Tin and Silver.** Satisfactory results from the use of dental amalgam alloys are more often due to the proper proportions of silver-tin and mercury than to the presence of additional metals. It may then be advisable to examine an alloy for the quantity of silver and tin contained.

To do this we dissolve fifteen grains of the alloy in nitric acid, as in the previous work, heating the result until dry, to get rid of the acid. Then add two or three ounces of water to the beaker and filter, and thus obtain a solution containing all of the silver in the form of the nitrate of silver.

To this solution we add hydrochloric acid as long as a precipitate of chlorid of silver continues to fall. Then, having carefully weighed a filter paper, we collect the chlorid of silver by filtration upon this filter paper, allow it to become perfectly dry, weigh; when deducting the weight of the paper, the result will be, of course, the weight of silver chlorid, and this, multiplied by .7526, will give the weight of silver in the 15 grains of alloy.

To obtain the weight of tin, assuming, for simplicity, that gold, platinum and antimony are not present, transfer the white tin-acid to a small crucible by the aid of a little water. Heat the crucible, and as all water evaporates, raise the temperature to a red heat, when the tin-acid (metastannic acid) is changed to stannic oxid ( $\text{SnO}_2$ ); cool, weigh (weight is that of stannic oxid), and multiply result by .7866, when this final result will be the weight of tin in 15 grains of the original alloy.

In a complete quantitative analysis copper is weighed as the sulphid, cadmium as the oxid, gold as the pure metal, platinum as a double chlorid with ammonium, zinc as oxid, and antimony as antimonate of sodium.

## **Clinical Aspect of Pyorrhea Alveolaris.**

By M. M. BETTMAN, D.M.D., Portland, Ore.

*Read before the Portland Dental Society, at Portland, Ore., February 1, 1910.*

The clinical history of pyorrhea alveolaris is similar to that of other diseased conditions. If diagnosed and treated at its outset, the prognosis is very favorable and the cure rapid, but if early diagnosis is neglected, as is very often the case, the extent of involvement precludes the prognosis of a speedy cure, and, what is more important, the patient's constitution is very often undermined, causing a train of symptoms and much misery.

When a patient presents for dental services, it is the duty of the dentist not only to fill the carious teeth, but to examine the gums very carefully for any sign of gingivitis. The earliest diagnostic evidence of interstitial gingivitis is an inflammation of the gums and bleeding from the least irritation. The dentist should watch for any change in the appearance of the gums, either in color or shape. Few, however, give this phase of dentistry the proper attention, but devote their time to the teeth only.

### **Cases From Practice.**

Within the last week two cases have come to my notice which were plainly cases of pyorrhea alveolaris. Although the diagnosis in both cases was positive enough, they were mistaken in each instance by the attending dentists for abscessed teeth and treated accordingly.

The first case was a male, age 28. He first presented himself to his family physician complaining of headaches and indigestion, to which he had been subject for the last two months. After a careful examination his medical adviser prescribed for the symptoms and referred the patient to one of our prominent dentists to have his teeth and gums examined. The dentist found pus exuding from the upper right lateral and central, and informed the patient that the two teeth were abscessed and would have to be treated. After drilling into both pulp chambers, the pulps of which were very much alive, pressure anesthesia was used, and the pulp anesthetised and removed. The teeth were then treated for a few days and filled in the usual manner. The pain subsided for a short time, due to lancing of the gums which liberated the pus. Several days later the pain returned and the lateral was extracted, the missing tooth being then supplied by a bridge from the cuspid. The patient was shortly afterward referred by his physician to me for suspected pyorrhea. I found a large pyorrheal pocket around the devitalized central and smaller ones around a number of other teeth. Upon questioning the patient

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I learned that his gums had been inflamed for at least two years. I am at present treating the pyorrheal condition and feel certain that the stomach symptoms will subside when the mouth is cured.

**Case II.** The other case is very similar. The patient, female, about 35 years of age, noticed a swelling on the jaw opposite the lower right lateral. Her family dentist, one of our busy practitioners, diagnosed the abscess as due to a putrescent pulp in the lateral incisor. He opened into the canal and removed the pulp, which was vital. After eight-days' treatment with no apparent benefit the patient became dissatisfied and consulted another dentist who pronounced it a case of pyorrhea alveolaris and referred her to me for treatment.

In reporting the foregoing cases my object has been not to reflect upon the ability of those erring in the diagnosis, but, on the contrary, to impress upon those present the necessity of a careful examination in all cases, no matter how simple they may seem. In the first case, the patient, through the error in diagnosis not only lost a good lateral tooth, but was obliged to sacrifice the crown of the cuspid in order to restore the extracted tooth. The other patient was forced to undergo the torture of having a vital tooth devitalized, and then receiving no relief.

In case I, the dentist, when told that the trouble was due to pyorrhea alveolaris, excused himself by saying that the condition could not be cured and, therefore, no harm was done the patient. This is where the average practitioner fails. He will usually remove the calcareous deposits superficially, syringe the gums with warm water, or perhaps hydrogen peroxide; inject a little medicine into the pockets, and instruct the patient to use Blank's tooth powder or paste and have the tartar removed again in a few weeks or months, adding as a parting consolation that the condition can not be cured and that at best the patient can only hope to retain the teeth a short time, when they will have to be replaced by bridgework or a plate. In a large number of cases the patient, after receiving this sympathetic advice, will neglect the teeth almost entirely in the belief that as they can not possibly hope to save them for more than a few months any time spent in their care is that much time wasted. Aside from the harm done to the gums and alveolar process, through neglect in the treatment of a pyorrheal condition, is the derangement of the stomach and other organs, brought about by the constant swallowing of pus, which in twenty-four hours will amount to a considerable quantity.

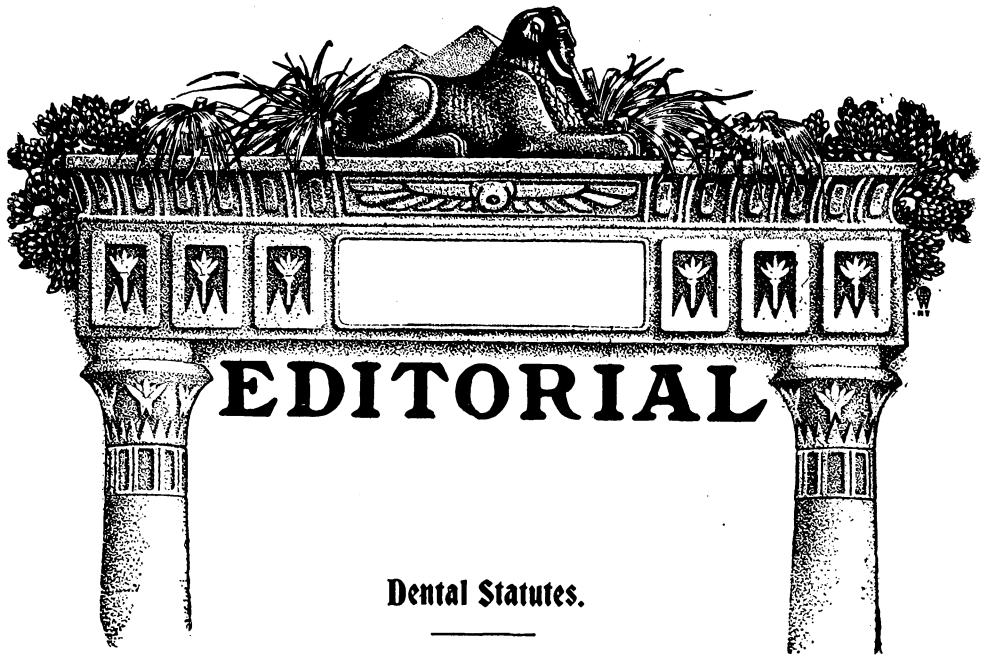
**Pyorrhea  
Curable.**

To those few who still maintain that this condition can not be cured, and who refuse to give it the proper attention and treatment, I would say that it is better by far to extract the affected teeth than to allow them to remain in situ, with pus around them and to compel the poor suffering patient to swallow the pus which in time will cause any number of diseased conditions of other parts of the body. But here again let me remind you that the condition termed pyorrhea alveolaris or interstitial gingivitis can be cured, providing proper attention is given to the treatment; and who will gainsay that a set of natural teeth is worth many times more than the best plate or bridgework. Therefore, it is the duty of each and every dental practitioner to see to it that his patient, who is unfortunate enough to have pyorrhea alveolaris, is given the proper treatment.

**Case III.**

The following is an interesting case taken from my office records: Mr. C., age 50, was referred to me by Dr. Treve Jones, November 18, 1909, for treatment for pyorrhea alveolaris. Upon examination I found pus flowing from the upper cuspids and from most of the lower teeth. The lower centrals and laterals were very loose, in fact so loose that before scaling I had to ligate them so as not to pull them out. There was also a large swelling on the left jaw due to a pericemental abscess on the buccal surface of the root of the lower second bicuspid. The patient had been troubled for several years and was told by a dentist, whom he consulted in the East before coming to Portland, that he would have to lose his teeth as the condition could not be relieved. I treated the case for several weeks and succeeded in stopping the pus formation and in tightening the tooth. The patient, being only here on a visit, left for the East a few days ago, but before going reported to me that his gums felt fine and he could now use his teeth as well as ever. The swelling has entirely disappeared and the patient is much more pleased than he would have been had his teeth been extracted and plates made.

In concluding I would say that the dentist, as well as the physician, should always be on the lookout for any signs of impending pyorrhea, and that it is the duty of the dental practitioner to save his patients' teeth whenever possible, just as much as it is the physician's duty to save a limb, instead of amputating it. Extraction should only be resorted to when everything else has failed.



### **Dental Statutes.**

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In March, 1898, we published a synopsis of the dental laws of the United States, accompanied by a map, on which each State was colored, so that the main features of its dental law could be seen at a glance. Thus, those States which would accept only college graduates as candidates for examinations were printed in blue. These were New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, Georgia, Florida, Texas, Colorado, Wyoming, Montana and Washington, a total of thirteen States which may be said to have had "blue laws" in 1898.

Since that time we have published numerous digests of the dental laws, but in this issue we present what we think is the most complete and accurate which has been as yet compiled, and thanks are due to Dr. Irwin for his indefatigable labors to this end. At the same time it may be said that many Board Secretaries show a strange lack of interest, and great tardiness in replying to letters of inquiry in regard to their legal and board requirements.

It is noteworthy that the requirement of a college graduation—the "blue law"—has greatly spread since 1898. In addition to the original thirteen, if a map were printed at this time, we would be obliged to add



the following: California, Connecticut, District of Columbia, Hawaii, Iowa, Kansas, Kentucky, Louisiana, Missouri, Minnesota, Nebraska, New Mexico, North Carolina, Oregon, Ohio, Philippine Islands, South Carolina, Tennessee, Utah and Wisconsin, a total of twenty States which have increased their standards since 1898, making a grand total of thirty-three States in which college graduation is absolutely demanded. This is a healthy advance, yet there is a discouraging aspect also. We see from this that during the last twelve years at least twenty States, and really the number is greater, have revised their dental statutes; yet, even to-day there are not two State laws which are identical. And yet practically all these laws have been inspired, if not actually formulated, by dentists. Moreover, during all this time the National Association of Dental Examiners has been in existence, and one of the primary objects of this body, announced at its organization, was to have been the "unification of the dental laws."

The unification of State laws in regard to any subject is admittedly difficult, yet, if unification were ever possible, it would seem that dentistry offers the best opportunity. With few, outside of the dentists themselves, taking any special interest in the language of the statutes; with State dental societies, a national organization, and especially with a National Association of Dental Examiners avowedly dedicated to this work, unification certainly should be possible. Has the Examiners' Association ever made any real effort? Has any committee ever been appointed whose duty it should be to formulate a law which might fit conditions in all States? If no such committee has been appointed in the past, why may not the attempt be made now? The map which we published in 1898 showed at least four different standards for granting licenses, with only thirteen States united in demanding a college education of its legalized practitioners. At the present time we find thirty-three States agreed upon this point. Why should not these thirty-three States have exactly similar laws? Will the Examiners' Association undertake this?

**Peculiar Features  
of Dental Laws.**

Some of the dental statutes contain rather unique features. In Wisconsin there is a provision that "All licenses and all rights under the law expires on the 30th day of September of each year. Any person continuing in practice after that date without holding a certificate of

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registration for the following year is liable to the penalty of the law for each and every operation he performs." This requirement of registering annually might seem like a slight hardship, and yet it would probably be advantageous in giving the authorities some opportunity to keep track of illegal practitioners.

Montana accomplishes a similar purpose in a somewhat different manner. The clause reads: "Every registered dentist shall in each and every year pay to the Board of Dental Examiners a fee of four dollars as his annual dues, such payment to be made on the first day of May of each year." Dr. Irwin recommends that this provision should be in every dental law, and states that "Virginia also finds this law advantageous." It would be possible in this manner for the reputable practitioners to furnish a fund to their Board of Examiners, which might be utilized in prosecuting illegal practitioners.

The Arizona law contains a requirement which seems to need revision. The first clause, dealing with eligibility for the examination, states that the candidates must "Furnish satisfactory evidence of having graduated from a reputable dental college of the United States of America, which must be a member of the National Association of Dental College Faculties." Indiana also requires that "Applicants must be graduates of colleges recognized by the National Association of Dental Faculties." These States, therefore, have placed in the hands of a body outside of the State, decision as to the eligibility of candidates for examination. If this rule were strictly enforced, it would mean that Arizona and Indiana bar from practice within their boundaries all graduates of the Universities of Pennsylvania, Harvard, Michigan, California, Iowa and other colleges which are not members of the Faculties Association named in the laws.

In response to the interpolation as to whether or  
**Special** not special examinations are granted to men already  
**Examinations.** in practice, a great majority of the secretaries reply  
in the negative. Florida and Maryland, however,  
grant five points to reputable practitioners having five-years' experience. This apparently means that the young graduate must pass an examination and make a score five points higher than men who have been in practice five years.

Iowa announces "No special examination granted to practitioners



already in practice." This State, however, interchanges with Vermont, New Jersey, District of Columbia, Tennessee, Nebraska, Kansas and Oklahoma, and, apparently, by special agreement, will license practitioners from Ohio, Indiana, Michigan, Minnesota, Illinois and Wisconsin, provided they pass a practical examination only.

Minnesota has a special agreement with Iowa, Nebraska, Wisconsin, Kansas, Indiana, Michigan and Montana. Persons who have practiced five years in either of these States will be required to prepare a cavity and make a gold filling; also to prepare a cavity and make an amalgam filling; also to prepare a root and make a crown. If this is done successfully, license is granted.

In New York "Applicants who have had six years' practice in dentistry may, on the unanimous recommendation of the Board, receive a license to practice, provided they meet the necessary professional and preliminary requirements."

In Ohio "The Board may excuse from the written examination an applicant who has been in legal and reputable practice in another State, Territory or district for at least five consecutive years next prior to filing his application and who holds a license from a similar dental board thereof, provided the laws of such State, Territory or district accord equal rights to a dentist of Ohio holding a license from the State Dental Board."

In Pennsylvania "Special examinations are given to those entitled to licenses under provisions of the new law." Just what these provisions are is not stated.

The ideal dental statute would authorize a Board of Dental Examiners, at their own discretion, to conduct two totally different styles of examinations. A new graduate should be rigidly examined in the theory of dentistry, but his practical examination might be sufficiently lenient to permit him to pass, provided he could show the minimum degree of skill which would make it safe for him to be allowed to practice.

The examination for a man who has been in practice for any extended period should be entirely different. The theoretical examination might be restricted to those points upon which it is fundamentally necessary that he should be informed, but his practical examination should be most rigid. There are many legal practitioners who may have had many years

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of experience and who, nevertheless, have not developed the skill requisite for even moderately good dentistry. Such men should not be allowed to move from one State to another merely upon the recommendation of the Board, which might be obtained by favor, or even because they are glad to see him move, nor should he be licensed upon a practical examination limited to one or two fillings. On the contrary, for a man whose qualifications are not positively known to the Board the practical examination should be rigid and should include a demonstration in every branch of practical work in which he would intend to engage. In the case of a man who intends to specialize exclusively, then, of course, the examination might be more rigid in that one direction.

Again we ask, now that the standards of so many States are so much more nearly alike, will the Examiners' Association undertake to formulate a uniform dental law and to recommend the adoption of one law throughout the United States? As thirty-three States are now requiring that its practitioners shall be college graduates, the Faculties' Association might well aid this movement by agreeing upon a uniform standard of preliminary requirements.

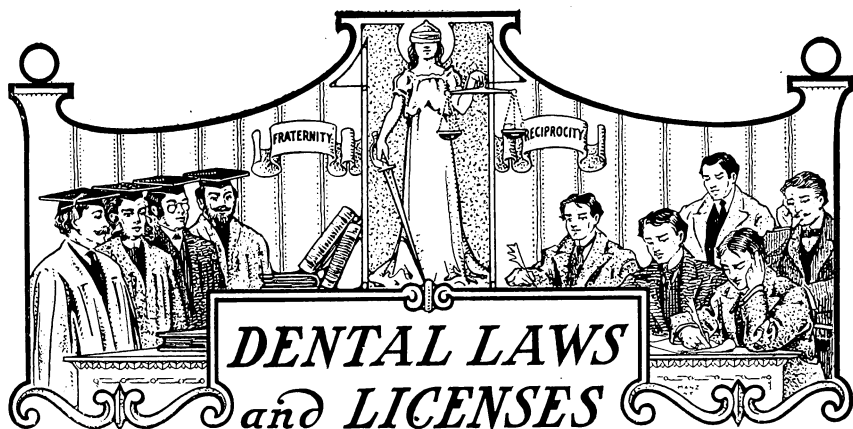
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### Professor James Truman.

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We are pleased to present our readers with a portrait of Professor James Truman, surrounded by the members of the James Truman Dental Society of the University of Pennsylvania. Professor Truman has retired from his active professorship, but is still "an influence and an inspiration to his boys."





## Dental License Requirements.

### A Brief Guide. State Dental Laws Condensed.

The requirements of Dental Examiners from Applicants for a License to Practice Dentistry in the United States of America and Island Possessions.

By ALPHONSO IRWIN, D.D.S

Secretaries of State Dental Examining Boards are requested to notify us of any corections or changes in regard to dates, places of meetings and special features of examinations, or any changes that may occur in their State law or the personnel of their board. It is aimed to make this publication serve as an accurate guide to dental examiners, recent graduates, colleges and the profession at large.

### **Reciprocity.**

District of Columbia interchanges with New Jersey.

Indiana interchanges with New Jersey, Michigan, Minnesota, Iowa.

Iowa reports interchanges with Vermont, New Jersey, District of Columbia, Indiana, Ohio, Michigan, Minnesota, Nebraska, Kansas and Oklahoma.

Michigan interchanges with New Jersey and the Canadian North-west Territories.

Nebraska interchanges with Indiana, Iowa, Minnesota, Montana, New Jersey.

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Maryland does not interchange but exercises its personal judgment in accepting licenses of other State Boards for registration.

New Jersey interchanges with Utah, Tennessee, Indiana, Michigan, Vermont, District of Columbia.

Oklahoma reports interchange with Arkansas.

Tennessee interchanges with New Jersey.

Utah interchanges with New Jersey.

Vermont interchanges with New Jersey.

### Memoranda.

It is reported that: Connecticut is permitted by law to interchange; New Jersey does *not* interchange with Pennsylvania; New Jersey does *not* interchange with New York; New York interchanges with Pennsylvania, but does not interchange with any other State; Arkansas may interchange; Indiana interchanges; Minnesota interchanges; Pennsylvania interchanges with New York; Rhode Island does not interchange; Idaho may interchange licenses with other States; Louisiana may interchange licenses with other States, upon certain conditions being complied with which are specified in their law.

### Examining Boards Which Interchange License.

District Columbia, Idaho, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Montana, New York, Nebraska, New Jersey, Ohio, Oklahoma, Pennsylvania, Utah, Vermont, West Virginia, Wisconsin.

### Memoranda.

Delaware: "This State does not exchange licenses or certificates, because the law, as it stands, will not permit it. We expect additional legislation at the next meeting, to permit it."

C. R. JEFFERIS, Secretary.

Maryland: "Maryland does not interchange but exercises its personal judgment in accepting the licenses of other State Boards for registration."

F. F. DREW, Secretary.

### Boards Which Do Not Interchange Licenses.

Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Illinois, Kansas, Kentucky, Maine, Maryland, Massachusetts, Missouri, Mississippi, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Rhode Island, South Carolina, South Dakota, Texas, Virginia, Washington, Wyoming, Hawaii, also British Columbia.

Twenty-seven States do not interchange, nineteen Boards of Dental Examiners interchange licenses, three non-interchanging boards favor "Reciprocity" and two States are endeavoring to secure legislation to permit interchange of licenses in the laws of their State. Philippine Islands and Porto Rico fail to report whether they interchange licenses with other Boards of Dental Examiners.

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### Boards Which Do Not Examine Undergraduates.

California, Connecticut, Colorado, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Missouri, Minnesota, Montana, Nebraska, New Jersey, New York, New Mexico, North Carolina, Oregon, Ohio, Philippine Islands, Pennsylvania, South Carolina, Tennessee, Utah, Wisconsin, Wyoming, Washington.

#### Alabama.

The Board will meet on Monday before the second Tuesday in May, 1910, in the city of Mobile, Ala., with the Battle House as headquarters. In addition to the regular written examination the following will be required:

Each applicant must fill at least two teeth having approximal cavities, one with gold, the other with alloys; this work is to be done under the immediate supervision of the board, the latter to pass upon the selection of suitable cavities. The board will endeavor to furnish patients, but failing to do so, applicants for license must find or bring their own patients, also instruments and material. Each applicant must take an impression of the mouth, make a plaster cast of the same, and cut from the cast the six anterior teeth and make a bridge with porcelain facings. The cast may be made and the facings fitted before the examination, but the backings must be put on and the facings arranged, also invested and soldered, under the supervision of the board, hard solder being required. Or any other test they may desire.

Board of Dental Examiners: Dr. J. H. Hall, Collinsville, Ala., Practical Prosthetic Dentistry, Metallurgy; Dr. P. R. Tunstall, Mobile, Ala., Chemistry and Materia Medica; R. B. Chapman, Troy, Ala., Anatomy; T. P. Whitby, Secretary, Selma, Ala., Practical Operative, Unwritten Operative; W. E. Proctor, Sheffield, Ala., Dental Pathology and Histology.

#### Arkansas.

Examination with or without diploma; applicants must attain an average of 75 per cent. to pass. Examination fee, \$15.00. No special examination granted to practitioners already in practice; no temporary licenses.

All applicants must pass an examination, with or without diploma. The general average must not be less than 75 per cent. No interchange with any State. No temporary license. Present board is: Chas. Bergstresser, Eureka Springs, President; A. T. McMillin, Little Rock, Secretary and Treasurer; A. G. Ragland, Ft. Smith; R. S. Woodard, Stuttgart; E. H. Johnson, Pine Bluff. Spring meeting of the board will be in June 6 and 7. Examination, Little Rock, Ark., every November. Examination fee, \$15.00.

Little Rock, Ark.

DR. A. T. McMILLIN, Secretary.

#### Arizona.

There will be a meeting of the Arizona Board of Dental Examiners on the 8th, 19th, 20th and 21st day of April, at Tucson, Arizona.

## ITEMS OF INTEREST

Candidates should have their application, and fee of \$25.00 should accompany same, at least twenty days before meeting.

Theoretical examination includes the following subjects: Anatomy, Physiology, Chemistry, Materia Medica, Therapeutics, Metallurgy, Histology, Pathology, Operative and Mechanical Dentistry, Oral Surgery, Practical Demonstration of Skill in Operative and Mechanical Dentistry will also be required, and candidates should come prepared with instruments and material for making fillings and crowns in the mouth.

No person shall be eligible for examination by the Territorial Board of Examiners who shall not,

First.—Furnish satisfactory evidence of having graduated from a reputable dental college of the United States of America, which must be a member of the National Association of Dental College Faculties.

Second.—Or who shall have graduated from a high school or similar institution of learning, in this Territory or some other State or Territory of the United States, requiring a four-years' course of study, and who can furnish to the Board of Dental Examiners an affidavit containing his or her name, the name of his or her preceptor, and the name of at least two reputable witnesses, certified to before a notary public, showing that he or she has completed an apprenticeship of three years of twelve months each, with a licensed practitioner of dentistry; or,

Third.—Can furnish said Board of Dental Examiners a certificate from the State Board of Dental Examiners, or similar body, of some other State or Territory in the United States, showing that he or she has been a licensed practitioner of dentistry in that State or Territory for at least five (5) years.

Said board shall have the power to determine the good standing of any college or colleges from which such diplomas may have been granted. The examinations shall be elementary and practical in character, but sufficiently thorough to test the fitness of the candidate to practice dentistry. It shall include, written in the English language, questions on the following subjects: Anatomy, Physiology, Chemistry, Materia Medica, Therapeutics, Metallurgy, Histology, Pathology, Operative and Mechanical Dentistry, Oral Surgery, and also demonstrations of their skill in Operative and Mechanical Dentistry. The papers of all candidates shall be taken as evidence of his or her educational qualifications in English, Composition and Grammar. All persons successfully passing such examinations shall be registered as licensed dentists in the board register provided for in Section 3, and also receive a certificate of such registration, said certificate to be signed by the president and secretary and treasurer of the board.

Members of the Board: John A. Lentz, D.D.S., President, Phoenix; W. A. Baker, D.D.S., Secretary and Treasurer, Tucson; J. H. Blain, D.D.S., Prescott; J. D. Holcomb, D.D.S., Globe.

Undergraduates not eligible for examination.

### California.

Examination fee, \$25. No special examination granted to practitioners already in practice. No interchange of license with any State. Examination at San Francisco in June and December, Los Angeles also. Three examinations yearly.

## ITEMS OF INTEREST

Board of Dental Examiners of California: President, H. R. Harrison, San Diego; Treasurer, G. Marice Crown, Los Angeles; Secretary, C. A. Herrick, San Francisco; Fred G. Baird, San Francisco; John M. Blodgett, Lodi; J. W. Neblett, Riverside; Joseph Loran Pease, Oakland.

**Colorado.** The State Board meetings are held the first Tuesday in June and December. Examinations are

held upon all subjects taught in any reputable dental college. All applicants must present a diploma from some reputable dental college. No interchange of license with any State, but in the case of all applicants an examination in full, both theoretical and practical, is required. For further information, apply to Mallory Catlett, Secretary, Denver, Colo.

Dr. F. H. Sutherland, President, 701 Symes Building, Denver, examines in Operative Dentistry and Anesthetics; Dr. E. O. Hile, Loveland, Colo., Pathology and Materia Medica; Dr. C. N. Guyer, Denver, Colo., Prosthetic Dentistry and Chemistry; Dr. B. Frank Gray, Treasurer, Denver, Orthodontia and Oral Surgery; Dr. Mallory Catlett, Secretary, 526-27 Empire Building, Denver, Anatomy, Physiology, Histology and Bacteriology.

**Connecticut.** Applicant for license must have diploma, or five-years' instruction from a licensed dentist, or three-years' practice as a legally qualified dentist. Examination fee, \$25. Examinations are held in June and November. A special clause permits reciprocal interchange of licenses in accordance with the Asheville resolution, but as yet the board has not granted it, it being left to the discretion of the commission. Term of office changed to five years. Hereafter one to be appointed each year for that term. Recorder, Gilbert M. Griswold, Hartford, Conn.

State of Connecticut Dental Commissioners: President, Howard G. Provost, Winstead, term expires July 1, 1910, examines in Chemistry, Metallurgy and Oral Surgery; Recorder, Gilbert M. Griswold, Hartford, term expires July 1, 1911, examines in Dental and Oral Pathology, Therapeutics and Materia Medica; Frederick W. Brown, New Haven, term expires July 1, 1912, examines in Anatomy, Physiology and Histology; D. Everett Taylor, Willimantic, term expires July 14, 1914, examines in Prosthetic Dentistry, Crown and Bridgework and Anesthesia; Albert W. Crosby, New London, term expires July 1, 1913, examines in Operative Dentistry, Orthodontia, Oral Hygiene and Dental Prophylaxis; Gilbert M. Griswold, Recorder, Hartford, Conn.

**Delaware.** Requirements: A written notice of desire to take the examination at least two weeks before the date when held, accompanied by \$11 fee. The insertion of one gold filling before the examiner of practical operations. The candidate furnishes his patient; instruments and materials, except an engine, which will be supplied. The diploma of graduation from a recognized dental college must be shown together with a late photograph of the candidate. Also an affidavit made before one of the local notaries public in the presence of a member of the board, that the candidate is the person named in the diploma. The photograph and affidavit are retained

## ITEMS OF INTEREST

by the board. Any candidate failing to pass the board shall not be eligible for re-examination before the date of the next regular meeting, and then only on the same conditions as a new candidate, including fees.

Board of Examiners: President and Examiner in Orthodontia and Mechanical Dentistry, Dr. S. H. Johns, Ninth and Van Buren Sts., Wilmington, Del.; Secretary and Examiner in Operative Dentistry, Dr. C. R. Jefferis, 1016 Delaware Ave., Wilmington, Del.; Treasurer and Examiner in Chemistry and Materia Medica, Dr. C. J. Kinkead, 828 Washington St., Wilmington, Del.; Examiner in Pathology and Therapeutics, Dr. R. H. Clifton, Smyrna, Del.; Examiner in Anatomy and Surgery, Dr. C. M. Hollis, Seaford, Del.

Dr. Starr Parsons, President, 1309 L St., N. W.,  
**District of Columbia.** Operative Dentistry and Physiology; Dr. Chas. W. Culbertson, Secretary, 309 Seventh St., N. W., Chemistry and Prosthetic Dentistry; Dr. Wm. B. Daly, 1340 New York Ave., Materia Medica and Anatomy; Dr. H. Janney Nichols, 1339 K St., N. W., Oral Surgery and Histology; Dr. Arthur B. Crane, 916 Fourteenth St., N. W., Bacteriology and Metallurgy.

The semi-annual examinations of the Board of Dental Examiners are held the first week in January and last week in June of each year.

All applications for examinations must be accompanied by the fee of \$10.00, one photograph of the applicant, and filed with the secretary at least ten days prior to date of examination.

For further information and requirements for examination address the Secretary, Chas. W. Culbertson, M.D., D.D.S., 309 Seventh St., N. W., Washington, D. C.

**Florida.** Board: President, J. E. Chace, Ocala, examines in Operative Dentistry, Orthodontia and Oral Hygiene; Secretary and Treasurer, W. G. Mason, Tampa, Chemistry, Materia Medica, Pathology and Therapeutics; T. J. Welch, Pensacola, Prosthetic Dentistry and Metallurgy; C. F. Kemp, Key West, Physiology and Bacteriology; R. P. Taylor, Jacksonville, Anatomy, Histology and Oral Surgery. Requirements: Practitioners who have been in ethical practice for five years or more will be allowed five points. No interchange of licenses with any State. Only graduates of "reputable" dental colleges examined. Fee, \$25.00. Meeting to be held in St. Augustine in June.

**Georgia.** Board: Thomas Cole, D.D.S., President, Newnan, Ga.; S. D. Rambo, D.D.S., Marietta, Ga.; C. Z. McArthur, D.D.S., Fort Valley, Ga.; P. E. Callihan, D.D.S., McRae, Ga.; D. D. Atkinson, D.D.S., Secretary and Treasurer, Brunswick, Ga.

Excerpts from the Georgia Law: "Applicants must present diploma from a reputable dental college, or present a license from some other State board." Fee, \$10.

Licenses may be revoked for "cruelty," "incapacity," "unskilfulness," "gross neglect," "indecent conduct," "professional misbehavior," "unfitness," "conviction of any misdemeanor in any court in this State."

Licenses must be "registered by the clerk of the Superior Court in the county" in which the person shall practice.

## ITEMS OF INTEREST

Requirements: Examination in theory and practice; the latter includes the insertion of gold fillings.

Interchanges: None.

Meetings, at the close of the college term in Atlanta and at the annual meeting of the Georgia State Dental Society, anywhere in Georgia during the months of June, usually.

Undergraduates not examined.

No interchange with other boards.

Examination required with or without diploma.

**Idaho.** Examination fee, \$25. No special examination granted to practitioners already in practice.

The board may exchange licenses. (See Section II, New Laws.)

Examinations June and November.

Board of Examiners: President, Dr. Wm. Youngberg, Cœur D'Alene; Secretary, Dr. E. L. Burns, Boise; Dr. C. E. M. Lousc, Pocatello; Dr. J. B. Burns, Fayette; Dr. T. Boyd McBride, Moscow.

"The following preliminary qualifications shall be required of candidates to entitle them to examination by this board for a license to practice dentistry in the State of Illinois: Graduates of a reputable dental or medical school or college, or dental department of a reputable university, who enter the school or college as freshmen on or after the school year of 1906-7, must have a minimum preliminary education of not less than graduation from an accredited high-school or a certificate from the State Superintendent of Public Instruction, equivalent officer or deputy, acting within his proper or legal jurisdiction, showing that the applicant had an education equal to that obtained in an accredited high-school, which certificate shall be acceptable in lieu of a high-school diploma."

Examination required with or without diploma. Examination fee, \$20.00; license fee, \$5.00. Reciprocity with the following States: Indiana, Iowa, Kansas, Michigan, Nebraska, Ohio, Wisconsin. Examination twice yearly, usually in June and November. Board members: C. P. Pruyn, President, Chicago; T. W. Pritchett, White Hall; Henry L. Whipple, Quincy; W. F. Whalen, Peoria; T. A. Broadbent, Secretary, 705 Venetian Building, Chicago.

**Indiana.** Board of Dental Examiners: Alex. Jameson, President, Indianapolis, examines in Pathology, Oral Surgery, Orthodontia; Fred J. Prow, Bloomington, examines in Operative Dentistry, Crown and Bridgework, Bacteriology; Fred. S. Anderson, Richmond, examines in Anatomy, Physiology, Histology, Oral Hygiene; J. A. Dinwiddie, Lowell, examines in Dental Medicine, Anesthesia, Prosthetic Dentistry; F. R. Henshaw, Indianapolis, Secretary, examines in Chemistry, Metallurgy and Porcelain.

Regular meetings of the board are held in the State House, Indianapolis, on the second Tuesdays of January and June, continuing for four days. Reciprocity with New Jersey, Ohio, Michigan, Illinois, Minnesota, Iowa, Nebraska and Montana.

Reciprocal interchange requiring five-years' ethical practice and membership in State Society.

## ITEMS OF INTEREST

Applicants must be graduates of colleges recognized by the National Association of Dental Faculties. No temporary permits issued. For further information, apply to the Secretary, F. R. Henshaw, 507-508 Pythian Building, Indianapolis.

**Iowa.** Examination required with diploma. Examination fee, \$2.00. No special examination granted to practitioners already in practice. Open interchange of license with Vermont, New Jersey, District of Columbia, Tennessee, Nebraska, Kansas, and Oklahoma. Practical examination required with Ohio, Indiana, Michigan, Minnesota, Illinois and Wisconsin. Examinations held in June and December. Secretary, E. D. Brower, Le Mars, Iowa.

Practical examination held in Operative and Prosthetic Dentistry. Board: President, G. N. Beemer, Mason City, examiner in Operative Dentistry, Oral Surgery and Orthodontia; Vice-President, F. H. Rule, Ackley, examiner in Prosthetic Dentistry, Bacteriology and Histology; E. D. Brower, Le Mars, examiner in Anesthesia and Jurisprudence. T. F. Cooke, Burlington, examiner in Anatomy, Physiology, Chemistry and Metallurgy; J. A. West, Des Moines, examiner in Materia Medica, Therapeutics, Pathology and Hygiene. E. D. Brower, Secretary, Le Mars, Iowa.

**Kansas.** No special examinations granted to practitioners already in practice. No interchange of license with any State. Applicant must be 21 years old, of good moral character, and make application at least five days before the examination.

The meeting for examination will be held in Topeka in June.

Board of Dental Examiners: President, G. F. Ambrose, Eldorado; Vice-President, O. H. Simpson, Dodge City; Secretary, F. O. Hetrick, Ottawa. Fee for registering a diploma is twenty-five dollars (\$25). The same for an examination, and five dollars (\$5) additional for the certificate. F. O. Hetrick, Secretary, Ottawa, Kansas.

**Kentucky.** The Kentucky State Board of Dental Examiners will meet for the examination of applicants at Louisville on the first Tuesday in June and in December, commencing at 9 o'clock A. M. Applicants must be graduates of reputable dental colleges, and be examined in the following subjects: Anatomy, Physiology, Materia Medica, Pathology, Histology, Operative Dentistry, Oral Surgery, Chemistry, Metallurgy, Prosthetic Dentistry, Crown and Bridgework, Oral Hygiene and Dental Prophylaxis. Every applicant shall be required to insert two gold fillings and two amalgam fillings. Construct one bridge on a model, consisting of one shell and one Richmond crown, and two porcelain-faced dummies; one gold or porcelain inlay or Logan crown; all to be done before the board. A general average of 75 per cent. is required. Applicants must come prepared with instruments, engine and material, except bellows, blowpipe, lathe, stones and polishing cones, to do the above-mentioned work. The board would advise the use of gold in the bridgework. Application for examination must be made upon blanks furnished by the board, accompanied by a fee of \$20, which must be filed with the secretary ten days before the date of examination.

## ITEMS OF INTEREST

Board of Dental Examiners: President, C. W. McGuiar, Mumfordsville, term expires 1913; Dr. J. W. Juett, Eminence, term expires 1910, examines in Pathology and Histology; J. Richard Wallace, Louisville, term expires 1912, examines in Chemistry and Metallurgy; G. W. McGuiar, Mumfordsville, examines in Materia Medica and Operative Dentistry; J. H. Baldwin, Secretary, 305 Broadway, Louisville, term expires 1914, examines in Anatomy, Physiology, Oral Hygiene and Dental Prophylaxis; C. R. Shacklette, Louisville, term expires 1911, examines in Oral Surgery, Prosthetic Dentistry and Crown and Bridgework.

**Louisiana.** Board: President, Wallace Wood, Jr., D.D.S., New Orleans, La.; Secretary and Treasurer, Dr. V. K. Irion, 417 Macheca Building, New Orleans, La.; Wallace Wood, Jr., D.D.S., New Orleans, La.; C. V. Vignes, D.D.S., New Orleans, La.; R. L. Zelinka, D.D.S., Houma, La.; C. B. Johnston, D.D.S., Monroe, La.; J. Sidney Couret, D.D.S., New Orleans, La.

Requirements: "All applicants must be graduates and stand examinations."

Reciprocity: "This board will interchange licenses with any board which has the same requirements of graduation and examination. Provided, that such applicant shall have practiced five years in the State from which the said applicant shall come; not have failed before the Louisiana State Board of Dentistry, and declare his intention of actual residence in Louisiana, all declared under oath."

Examination: "All board meetings are held at New Orleans; the first session beginning on the second day following the commencement of the New Orleans College of Dentistry; and the second session beginning on the Wednesday following the third Monday of October of each year."

**Maine.** Board of Dental Examiners of the State of Maine: President, Langdon S. Chilcott, D.D.S., Bangor, examines in Operative Dentistry and Dental Surgery; Secretary and Treasurer, Edmund C. Bryant, D.D.S., Pittsfield, examines in Materia Medica, Therapeutics and Bacteriology; Dana W. Fellows, M.D., Portland, examines in Anatomy, Physiology and Histology; Will S. Payson, D.D.S., Castine, examines in Prosthetic Dentistry, Orthodontia and Metallurgy; William R. Bibber, D.D.S., Eastport, examines in Chemistry, Anesthetics and Anesthesia.

Requirements: The application must be filed with the Secretary, and the fee of twenty dollars paid before the examination. Theoretical examinations must be written in ink. All applicants are required to furnish their own patients, material, instruments and appliances, and to make in the mouth one cohesive gold filling, one non-cohesive gold filling, and to bring a Richmond crown or small bridge, which they must invest and solder in the presence of some member of the board.

Examinations are usually held at the Eye and Ear Infirmary, Portland, Maine, Langdon S. Chilcott, President.

**Maryland.** Board of Dental Examiners: M. G. Sykes, Ellicott City, President, examines in Chemistry and Bacteriology; W. W. Dunbracco, Baltimore, examines in Operative Dentistry; P. E. Sasscer, La Plata, examines in Oral Surgery; F. F. Drew, Baltimore, Secretary, examines in Pathology, Therapeutics

## ITEMS OF INTEREST

and *Materia Medica*; H. A. Wilson, Baltimore, examines in Anatomy and Physiology; T. B. Moore, Rising Sun, examines in Mechanical Dentistry. Practitioners who have been in ethical practice five or more years will be allowed a credit of five points for the first five years, and one additional point for each additional year.

Two examinations are held annually, one in May and another in November. No special examination for those already in practice. The rule is to examine all graduates, but in the cases of practitioners of long practice and undoubted standing the board may register without examination. No interchange of licenses with other States. F. F. Drew, Secretary, Baltimore.

**Massachusetts.** Members of Massachusetts Board: Dr. John F. Dowsley, 175 Tremont St., Boston, President; Dr. G. Everett Mitchell, Haverhill, Mass., Secretary; Dr. Geo. A. Maxfield, Holyoke, Mass.; Dr. Thos. J. Barrett, Worcester, Mass.; Dr. Wm. W. Marvell, Fall River, Mass.

Examinations are held in March, June and October. The dates are published in the dental journals the month preceding the examination.

All candidates examined must be of good moral character, and twenty-one years of age.

Fee, \$20 first examination; second examination no fee; third and subsequent examinations, \$5.

Temporary licenses are not granted.

No interchange of certificates with other States.

**Michigan.** Board: A. B. Robinson, President, Grand Rapids; A. W. Haidle, Secretary-Treasurer, Negaunee; C. H. Oakman, Detroit; F. L. Haynes, Manistee; E. A. Honey, Kalamazoo. Examination required with diploma. Examination fee, \$20. No special examinations or temporary licenses granted. Reciprocal interchanges of licenses with New Jersey, Iowa, Ohio, Indiana, Wisconsin, Montana, Illinois, Pennsylvania and Minnesota. Secretary, A. W. Haidle, Negaunee.

Meetings of the Michigan State Board of Dental Examiners for the examination of candidates for license to practice dentistry in Michigan, will be held at the Dental Department of the University of Michigan in Ann Arbor, twice a year, June and November. Applications must be in the hands of the Secretary at least five days before the examination. Application blanks and rules governing examinations will be furnished by any member of the board. A. W. Haidle, Negaunee, Mich.

**Minnesota.** Meetings: Place.—All meetings for examination are held at the Dental Department of the State University in Minneapolis.

Time.—Regular sessions are held on the second Tuesday after the first Monday in March and November, and continue as long as necessary. A special meeting is usually held in June.

All applications must be in the hands of the Secretary at least two weeks previous to the examination.

Applications: Blanks.—All applications must be made on blanks furnished by the board.

## ITEMS OF INTEREST

**Fees.**—A fee of ten dollars (\$10) must accompany each application, and is in no case returnable.

**Section A.**—If you have practiced dentistry legally in any of the following States: Iowa, Nebraska, Wisconsin, Kansas, Indiana, Michigan, Montana, for five (5) years or more, you will be obliged to furnish affidavits as follows: (1) From the board of the State licensed in. (2) From two practicing dentists of the State. (3) From two freeholders at your last residence in the State. Certifying to the above facts and your moral character and professional attainments. Blanks will be furnished by the board. Also you will be required to (4) prepare cavity and make one gold filling. (5) Prepare cavity and make one amalgam filling. (6) Prepare root and make one crown. A passing grade of 85 per cent. is required before license is issued.

**Section B.**—If you do not come under the head of Section A, then you will be obliged to (a) Present a diploma from a recognized college. (b) Take a written examination on following subjects: (1) Anatomy and Histology. (2) Physiology and Hygiene. (3) Chemistry and Metallurgy. (4) Operative Dentistry and Orthodontia. (5) Prosthetic Dentistry and Crown and Bridgework. (6) Pathology and Bacteriology. (7) Oral Surgery and Anesthesia. (8) Materia Medica and Therapeutics. (c) Take a practical examination as follows:

A diploma must be presented from a dental college in good standing or candidate must furnish the required proofs that the applicant has been licensed and has practiced in another State for five years or more, such State having and maintaining a standard equal with Minnesota, the board being the judge of the standards. No temporary licenses granted of any kind. Interchange licenses with Iowa, Indiana, Nebraska, Michigan, Wisconsin, Montana and Kansas as far as the theoretical examination goes. All applicants must take the practical examination. Examinations held on the second Tuesday after the first Monday in March and November. A special meeting is usually held in June. All examinations are held at Dental Department of State University in Minneapolis.

**Board of Dental Examiners:** President, R. W. Berthel, St. Paul; Secretary, G. S. Todd, Lake City; G. O. Orr, Jordan; F. E. Cobb, Minneapolis; W. A. Robertson, Crookston.

For further information apply to the Secretary, G. S. Todd, Lake City, Minn.

**Mississippi.** The Board of Dental Examiners of Mississippi will meet to examine applicants at Jackson. For particulars and requirements address the Secretary.

The board meets the third Tuesday of May in every year at the State Capital, Jackson, and consists of Drs. P. H. Wright, Oxford; Secretary L. B. McLaurin, Natchez; A. B. Kelley, Yazoo City; J. H. Shumaker, Poplarville, and E. Douglas Hood, Tupelo. Dr. A. B. Kelley, of Yazoo City, President, and Dr. L. B. McLaurin, Natchez, Secretary.

Excerpts from the Dental Law of Mississippi: "Section 1,527. Every person who desires to practice dentistry must obtain a license to do so, as hereinafter provided."

"Section 1,532. The Board of Dental Examiners shall meet at the

## ITEMS OF INTEREST

capital of the State on the third Tuesday of May in each year for the purpose of examining applicants for a license to practice dentistry; and to continue in session until all applicants for license have been examined and their examination has been approved or disapproved. All examinations, except as to character, shall be upon written questions on the following subjects: Operative Dentistry, Prosthetic Dentistry, Oral Surgery, Physiology, Metallurgy, Anesthetics, Orthodontia; and in Chemistry Anatomy, Materia Medica, Pathology, Therapeutics, Histology, and Bacteriology as they pertain to Dentistry; together with a practical examination in Operative and Mechanical Dentistry, three members of the board constituting a quorum for business."

Fee, \$10. Licenses are granted to "existing practitioners."

"Temporary licenses are granted."

The meeting of the State Board of Dental Examiners for the State of Missouri is in Jefferson City, Mo., in May. Applicants should come with all instruments and material to do operative work. A diploma from a reputable dental college, or a certificate of registration from another State is essential to examinations. The fee is ten dollars.

R. D. McIntosh, President, Joplin; C. B. Coleman, Vice-President. Poplar Bluff; S. C. A. Rubey, Secretary, Clinton; H. B. Purl, Carthage; T. E. Turner, St. Louis.

**Montana.** Annual meeting second Monday in July, 1909, continuing three days. Examination in all cases. Fee, \$25. No interchange of license as yet.

President, Dr. C. H. Head; Vice-President, Dr. G. W. Pelzer; Secretary, Dr. D. J. Wait; Treasurer, Dr. G. A. Chevigny; legal adviser, Dr. W. A. Tudor. Dr. D. J. Wait, Secretary, Helena, Mont.

Subjects: Oral Surgery and Histology, Dental Pathology and Dental Medicine, Anatomy, Physiology, Chemistry and Metallurgy, Operative and Mechanical Dentistry.

License must be registered with the county clerk within sixty days. Fee, \$25.

The following clause is quoted from the Montana Law, because it is an excellent provision and should be incorporated in every State law. Virginia also finds this law advantageous (A. Irwin).

"Every registered dentist shall in each and every year pay to the Board of Dental Examiners a fee of four dollars (\$4.00) as his annual dues, each payment to be made on the first day of May of each year."

In case of default the certificate may be revoked.

**Nebraska.** Board of Examiners (Dental Secretaries), meets at the State House in Lincoln, Neb., in May and November. Examinations practical and theoretical. C. F. Ladd, President, Prosthetic Dentistry, Metallurgy, Jurisprudence; J. H. Wallace, Vice-President and Treasurer, Operative Dentistry, Chemistry, Histology; C. S. Parker, Anatomy, Materia Medica, Therapeutics and Hygiene; E. A. Thomas, Physiology, Pathology, Oral Surgery, Practical Work. H. C. Brock, Secretary, Red Cloud, Neb.

## ITEMS OF INTEREST

### **Nevada.**

State Board of Dental Examiners: Dr. W. H. Cavell, Carson City, examines in Anatomy, Physiology, Metallurgy, Histology; W. W. Goode, Secretary and Treasurer, Carson City, examines in Chemistry, Pathology, Materia Medica, Oral Surgery; D. W. Rulison, President, Reno, examines in Operative Dentistry, Prosthetic Dentistry, Hygiene, Dental Jurisprudence; Elton N. W. Davis, Tonopah; other members not yet appointed. Dr. W. W. Goode, Secretary, Carson City, Nev.

Section 9. No person shall be eligible for examination by the State Board of Dental Examiners who shall not furnish satisfactory evidence of having graduated from a reputable dental college, which must have been endorsed by the Board of Dental Examiners of Nevada; or who shall not have graduated from a high school or similar institution of learning, in this or some other State of the United States, requiring a three-years' course of study, and who cannot furnish to the Board of Dental Examiners an affidavit, containing his or her name, the name of his or her preceptor, and the names of at least two reputable witnesses, certified to in the State of Nevada before a Notary Public, showing that he or she has completed an apprenticeship of four years of twelve months each, with a licensed practitioner of dentistry, in the State of Nevada, or cannot furnish to said Board of Examiners a certificate from the State Board of Dental Examiners, or similar body, of some other State in the United States, showing that he or she has been a licensed practitioner of dentistry in that State for at least five (5) years.

Examination required with or without diploma.

### **New Hampshire.**

Examination fee, \$10. No special examination. Examination held in Manchester, N. H., in June and December of each year. No interchange of licenses with any State. A. J. Sawyer, Secretary, Manchester, N. H.

Board of Registration in Dentistry: President, G. A. Bowers, D.D.S., Nashua, N. H., examines in Anatomy, Physiology and Oral Surgery; Secretary, A. J. Sawyer, D.D.S., Manchester, N. H., examines in Operative Dentistry, Histology, Pathology and Therapeutics; H. R. Beale, D.D.S., Kane, N. H., examines in Prosthetic Dentistry, Chemistry and Materia Medica.

### **New Jersey.**

Applicant must be a graduate of a reputable dental college. Examination fee, \$25. Reciprocal interchange of license with Utah, Tennessee, Indiana, Michigan, Vermont and District of Columbia. Practical and theoretical examination conducted in the Assembly Chamber, Trenton, N. J. Examinations are held the first Monday after the 4th of July, and the first Monday in December each year. Professional attainments, preliminary qualifications and recent photograph must accompany application to Secretary, Dr. Chas. A. Meeker, 29 Fulton St., Newark, N. J.

Examiners: President, B. F. Luckey; Secretary-Treasurer, Chas. A. Meeker; Wm. E. Tuex, Alphonso Irwin, H. S. Sutphen.

Requirements of Application: 1. All persons desiring to commence the practice of dentistry in New Jersey must apply to this board for a license so to do.

## ITEMS OF INTEREST

2. Applicants for examination shall present to the Secretary of this board at least two weeks before the commencement of the examination, at which he or she is to be examined, a written application on a form provided by said board, together with a certified check or money order for twenty-five dollars (\$25), the regular examination fee.

3. Evidence that applicant is twenty-one years of age.

An affidavit will be required stating that the work, preparatory to soldering, from the taking of the impression to the final investment, was done by the applicant without assistance from anyone. When examination is completed satisfactorily the plate will be returned to candidate. The board will not be responsible after thirty days for its return.

First.—The theoretical examinations will commence promptly at 9 A. M. on the days designated, and continue until applicants have been examined. Notice will be sent each candidate when he will be required to solder his plate, and also when to bring patient for operating.

Second.—Each candidate will receive a card, with his examination number. By this number shall the candidate be known throughout the examination.

Third.—Applicants shall affix to their examination papers their number only, and, on the completion of each paper, shall present the card to the examiner in charge of that section for his signature; at the completion of the examination the candidate shall sign the card under the number with full name and address and return to the Secretary.

Fourth.—Questions must be answered in routine, and papers handed in to the examiner of the section at the end of each session. All unanswered questions will be marked against the applicant.

Fifth.—Any candidate withdrawing from the sight of the examiner without permission shall forfeit his examination on that section.

Sixth.—Practical Prosthetic, Practical Operative Work in the State House at Trenton, N. J. Theoretical examination, Trenton, N. J.

Seventh.—All theoretical examinations shall be in writing. Candidates must come provided with fountain or stylographic pens.

Eighth.—Help of every kind must be removed from the reach and sight of the candidate. Any candidate detected in any attempt to give or obtain aid, in copying the questions, or in using any other unfair means, shall be instantly dismissed from the room, and his papers for the entire work shall be canceled.

Candidates are required to take entire examination, or no credit will be given, as no partial examination will be accepted.

All papers and signed cards must be returned in to the Secretary by 5.30 P. M. on the last day of the examination.

All communications should be addressed to the Secretary, Chas. A. Meeker, 29 Fulton Street, Newark, N. J.

Interchange of license with Utah, Tennessee, Indiana, Michigan, Vermont, District of Columbia.

Diploma from a registered school is necessary  
• **New York.** for admission to the dental licensing examination.

Applicants who have had six-years' practice in dentistry may, on unanimous recommendation of the board, receive a

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license to practice in this State, provided they meet the necessary professional and preliminary requirements. Fee, \$25. Chief, Chas. F. Wheelock, Examination Division, New York State Education Department, Albany, N. Y.

Board of Dental Examiners: President, Alex. M. Holmes, Morrisville, N. Y.; Anatomy, Secretary, H. L. Burkhart, Batavia, N. Y.; Physiology and Hygiene, A. M. Wright, M.D.S., 4 St. Paul Place, Troy, N. Y.; Chemistry and Metallurgy, A. R. Cooke, D.D.S., 815 University Block, Syracuse, N. Y.; Oral Surgery and Pathology, Wm. C. Deane, D.D.S., 616 Madison Avenue, New York City; Prosthetic Dentistry, Oscar J. Gross, D.D.S., 4 South Church Street, Schenectady, N. Y.; Therapeutics and Materia Medica, Fayette C. Walker, M.D.S. 309 State Street, Brooklyn, N. Y.; Histology, W. A. White, Phelps, N. Y.

Examinations are held in January, May, June and September.

Interchange with Pennsylvania.

Dr. H. J. Burkhart, Secretary, Batavia, N. Y.

Requirements: Rule 1.—All persons desiring to commence the practice of dentistry in the Territory of New Mexico must apply to the Territorial Board of Dental Examiners for examination, and must present at the time of examination his or her diploma from a reputable dental college, and on satisfactory examination will be granted a license.

Rule 2.—Applicants are requested to present to the Secretary of the board at least five days before the date set for the examination a written application on a form furnished by the board, and said application must be accompanied with the fee of \$25.

Rule 3.—The examination shall consist of the following branches written in the English language: Operative Dentistry, Prosthesis, Chemistry, Anatomy, Physiology, Pathology, Metallurgy, Materia Medica, Anesthetics, Orthodontia, Histology, Hygiene and Oral Surgery.

Rule 4.—Examination on theory and practice shall be of equal value.

Rule 5.—Practical operations shall consist of cases selected by the board; patient and instruments to be furnished by applicant.

Rule 6.—Applicant must bring instruments and material to do all practical operations at the chair, also plaster models and bite for a full denture, and carry case to the point of flasking.

Rule 7.—All written examinations shall be on paper furnished by the board; no other paper will be allowed in the room; when papers are turned in, questions must accompany answers, otherwise papers will not be accepted.

Rule 8.—After two-thirds of the applicants have finished a subject, others will be given thirty minutes to finish, at which time they must turn in their papers.

Rule 9.—No license will be issued to applicants whose average is below 75 per cent.

Rule 10.—Write answers in order of questions; don't give information that is not asked for.

*No temporary certificates issued.* The next examination will be held

## ITEMS OF INTEREST

at Las Vegas, July, 1910. Communication with this board must be accompanied by stamps if an answer is expected. M. J. Moran, Secretary, Deming, N. M.

Board of Examiners: F. E. Olney, President, Las Vegas; M. J. Moran, Secretary, Deming; E. J. Alger, Albuquerque; L. E. Ervin, Carlsbad; F. N. Brown, Boswell.

Applicants for license from this board are hereby informed that the following will be required:

**North Carolina.** 1st. To exhibit a diploma from a reputable dental college.

2nd. To file with the Secretary a certificate of good moral character.

3rd. To leave with the Secretary a fee of ten (10) dollars.

4th. To have a fair academic education.

5th. To obtain a standing of not less than 80 per cent. out of a possible 100, upon a written examination upon the following subjects, viz.: Anatomy and Physiology, Pathology and Therapeutics, Chemistry and Materia Medica, Histology, Bacteriology and Oral Surgery, Operative Dentistry, Prosthetic Dentistry, Metallurgy and Orthodontia.

6th. To operate in the presence of a committee from, or a member of the board, and to furnish his own instruments, engine and materials, etc., except chairs.

7th. Each applicant must bring a partial upper denture of not less than eight teeth ready for soldering—hard solder required. Work done in the presence of examiner.

8th. To certify upon his honor, at the end of each examination paper, that he has neither given nor received assistance.

Applicants for examination must be graduates of a regular reputable dental school. A fee of \$10 for examination is required. Examination for temporary license, valid only until the next regular meeting of the Board, may be given by one member of the board for which the fee of \$10 is charged. In no case is the fee returned. According to our law we are unable to interchange license. The next, or 1910 meeting, will be held in Wrightsville, N. C., in July. For further information, address Dr. F. L. Hunt, Secretary, North Carolina State Board of Dental Examiners, Asheville, N. C.

Board of Dental Examiners: Dr. V. E. Turner, President, Raleigh, N. C., Histology and Oral Surgery; Dr. J. H. Wheeler, Greensboro, N. C., Operative Dentistry; Dr. J. N. Johnson, Goldsboro, N. C., Anatomy and Physiology; Dr. F. L. Hunt, Asheville, N. C., Chemistry and Materia Medica; Dr. C. A. Thompson, Wilson, N. C., Pathology and Therapeutics; Dr. J. S. Spurgeon, Hillsboro, N. C., Prosthetic Dentistry and metallurgy.

Examination required with or without diploma.

**North Dakota.** Examination fee, \$10; additional fee for license, \$5.

No special examination granted to practitioners already in practice. No interchange of license with any States. Examination second Tuesday in July. Secretary, H. L. Starling, Fargo.

Board of Dental Examiners: President, G. T. McDonald, Jamestown; Vice-President, W. J. Brownlee, Devil's Lake; Secretary, H. L. Starling, Fargo; C. F. Sweet, Minot.

## ITEMS OF INTEREST

**Ohio.** All applicants for license must pass the examinations prescribed by law. Only graduates of reputable dental colleges are eligible to appear for examination. The board may excuse from the written examination an applicant who has been in legal and reputable practice in another State, Territory or district for at least five consecutive years next prior to filing, his application and who holds a license from a similar dental board thereof, provided the laws of such State, Territory or district accord equal rights to a dentist of Ohio holding a license from the State Dental Board. All applicants are required to take the clinical examination. Examinations are held in Columbus during the months of June and October. Examination fee, \$25. Applications should be filed with the Secretary ten days prior to date of examination. Secretary, F. R. Chapman, 305 Schultz Building, Columbus, Ohio.

State Dental Board: President, F. H. Lyder, 80 South Main Street, Akron, examines in Materia Medica, Therapeutics and Orthodontia; Secretary, F. R. Chapman, examines in Pathology, Histology and Bacteriology; Treasurer, L. L. Yonker, Bowling Green, examines in Chemistry, Metallurgy and Prosthetics; H. C. Matlack, Cincinnati. F. R. Chapman, Secretary, Columbus, Ohio.

**Oklahoma.** Examination required with or without diploma. Examination fee, \$25. No special examination granted to practitioners already in practice. Reciprocal interchange with Iowa. Examinations usually held in May and November of each year in Guthrie.

Board of Dental Examiners: President, W. W. Bryan, Claremore; Secretary, A. C. Hixon, Guthrie; Treasurer, F. C. Seids, Perry; M. W. Murray, Poteau; A. E. Bonnell, Muskegee.

Guthrie, Okla.

DR. A. C. HIXON, Secretary.

**Oregon.** All applicants must be examined. Candidates must have good moral character, diploma from reputable dental college, pay a fee of \$25, registration \$1.50 yearly. File application thirty days in advance and pass a written examination. The meetings of the board are held semi-annually in June (at Portland) and November. No interchange of license.

Board of Dental Examiners and the branches on which they examine: President, F. Y. Vaughn, Astoria, Ore., Anatomy and Physiology; Dr. Hayter, Dallas, Ore., Operative and Prosthetic Dentistry; Dr. Yates, Portland, Ore., Dental Anatomy and Pathology; Dr. A. S. Essen, The Dales, Ore., Materia Medica and Therapeutics; H. H. Olinger, Secretary, Salem, Ore., Chemistry and Metallurgy.

Rules governing examinations of the Oregon State Board of Dental Examiners: 1. No person shall be eligible to take examination unless he or she shall be of good moral character and shall present to the board his or her diploma from some recognized school in good standing, and shall give satisfactory evidence of his or her rightful possession of the same.

2. Candidates presenting themselves for examination shall file their application with the Secretary, and at the same time pay to him the fee of \$25. Applications will not be received more than thirty days prior to examination.

## ITEMS OF INTEREST

3. Temporary permits or licenses will not be granted under any circumstances whatever.

4. The examination will consist of written question on the following subjects: Anatomy, Physiology, Chemistry, Materia Medica, Therapeutics, Metallurgy, Pathology, Operative and Surgical Dentistry, and also Demonstrations of skill in Operative and Mechanical dentistry.

5. All written examinations shall be on paper furnished by the Secretary, and the board will also provide chairs for practical examinations, but the applicants are required to furnish their own instruments and material.

6. No fee will be returned to a candidate after he has filed his application for examination, but should he fail to meet the required percentage, he may present himself for a second examination at the next regular meeting of the board without charge.

7. A general average of 75 per cent. will be required in written examinations.

8. At the opening of the examinations the applicant will be furnished with an envelope containing a card with a number. The applicant will write his or her name upon the card, seal the envelope, and use this number on all examination papers. The sealed envelope will, at the conclusion of the written examinations, be handed to the Secretary, and not opened until the papers are graded.

9. Any Candidate detected in trying to give or obtain aid shall be dismissed from the room, and his or her paper for the entire work rejected.

10. Handwriting of candidates must be legible, and spelling and use of correct language will be taken into account in making up the rating on answers.

11. The Board of Examiners shall begin their inspection of the answers submitted by the candidates immediately after the close of the examination, and shall complete the same with promptness and dispatch. A correct set of answers to the questions of any one paper shall entitle the candidate to the full mark of that subject, viz.: one hundred points. Partial or imperfect answers shall be rated by the examiners in accordance with their degree of fulness and correctness.

The meetings of the board are held semi-annually—in June and November.

Examinations required in all cases. Diplomas required from all applicants except those coming under ten-years' clause of new dental law. Special examinations given those entitled to license under provisions of new law. Examination fee in all cases, \$25. Examinations in June and December. Simultaneously in Philadelphia and Pittsburg. Interchange with New York but no other State.

Secretary of Dental Council, Hon. Nathan C. Schaeffer, Superintendent of Public Instruction, Harrisburg, Pa.

The Board, as it now stands, is Dr. H. W. Arthur, President, 416 Pittsburg Life Building, Pittsburg; Dr. G. W. Klump, Secretary-Treasurer, Williamsport, Pa.; Dr. J. D. Whiteman, Mercer, Pa.; Dr. A. H. Reynolds, 4619 Woodland Avenue, Philadelphia, Pa., and Dr. T. A.

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Hogan, 524 Penn Avenue, Pittsburg, Pa.; Dr. John J. Moffit, Harrisburg, Pa. The examinations for 1910 will be held in June and December, the exact dates not yet having been set.

Board of Registration in Dentistry: Forest G. Eddy, 221 Butler Exchange, Providence, R. I., Operative Dentistry, Bacteriology; C. H. Davis, 24 High Street, Pawtucket, R. I., Physiology, Pathology; Albert L. Midgley, 312 Butler Exchange, Providence, R. I., Anatomy, Histology, Surgery, Orthodontia; James F. Gilbert, Woonsocket, R. I., Prosthetic Dentistry, Metallurgy, Crown and Bridgework; Harry L. Grant, Materia Medica and Therapeutics, Chemistry, Anesthesia.

All applicants examined. Examination fee, \$20. No special examination granted to practitioners already in practice. Secretary, Harry L. Grant, 1025 Banigan Building, Providence, R. I.

Board: President, A. P. Johnston, Anderson, S. C.; Secretary, B. Rutledge, Florence, S. C.; A. P. Johnston, B. Rutledge, H. J. Ray, J. M. Quattlebaum, P. H. Shealey.

Examinations are theoretical and practical on regular college branches. Applicants must furnish instruments and material for any demonstrations called for by the board. Applicants must exhibit diploma of a reputable dental college before being registered for examination. Must present a four-, or six-tooth bridge invested ready for soldering in presence of board.

The next annual meeting of above board will be held at Glenn Springs, near Spartanbury, S. C., on Friday, before the 2nd Tuesday in July, 1910. The State Association meets on 2nd Tuesday in July. Our law says the Board of Examiners must meet at time and place of the State Association annual meeting. We meet on Friday in advance, so as to finish during the Association meeting. The fee for examination for license is \$15. We have not arranged for interchange of license with any State. B. Rutledge, Florence, S. C.

Board of Dental Examiners: President, J. G. McCartney, Mitchell; Secretary, G. W. Collins, Vermillion; F. E. Field, Sioux Falls; E. H. Wilson, Miller; A. L. Revell, Lead. Examinations are held on the second Tuesday in January and July, at Sioux Falls. Candidate must be a graduate from a reputable dental college, or have had five-years' practice immediately preceding examination. Both practical and theoretical examinations, two gold fillings, one crown, articulating upper and lower set of teeth required. Fee, \$25. No interchange of license with other States.

Vermillion, S. Dakota.

G. W. COLLINS, Secretary.

Board: Dr. John R. Beach, Clarksville, Tenn., President; Dr. F. A. Shotwell, Rogersville, Tenn., Secretary-Treasurer; Dr. Southall Dickson, Bolivar, Tenn.; Dr. B. D. Brabson, Knoxville, Tenn.; Dr. J. M. Glenn, Jackson, Tenn.; Dr. J. B. Jordan, Nashville, Tenn. Meeting May 17, 1910, Nashville, Tenn.

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All applicants must possess diploma and pass an examination, both theoretical and practical. Examination fee, \$10. No special examination to practitioners already in practice. Reciprocal interchange of license with New Jersey and Iowa, in accordance with the provision of the Asheville resolution. Secretary-Treasurer, F. A. Shotwell, Rogersville, Tenn.

### **Texas.**

Board: Sam. G. Duff, D.D.S., President, Greenville; J. M. Murphy, D.D.S., Vice-President, Temple; Bush Jones, D.D.S., Secretary-Treasurer, 401 Ling Building, Dallas; R. D. Griffis, D.D.S., Paris; H. W. Lubben, D.D.S., Galveston; C. M. McCauley, B.S., D.D.S., Merkel.

Next examination held in Houston, Texas, June 13, 1910. Applications accompanied by fees of \$25 should be in the hands of the Secretary prior to examination.

Diplomas are not registered; examination required of all. Examination fee, \$25. No special examination to practitioners already in practice. No interchange of license with other States. Temporary license granted upon a written examination before one member of the board good until the following meeting. Application ten days before examination should be made to Secretary, Bush Jones, Dallas, Texas.

Examinations are held in June and December at different points in the State.

Official Application: Application for examination for a license to the Texas State Board of Dental Examiners. The undersigned hereby makes application to the State Board of Dental Examiners for license to practice dentistry in the State of Texas.....Signed applicant. The applicant is requested to answer in writing the following questions: State full name and address..... Age?..... How many years have you been engaged in the study of dentistry?..... Where and when?..... If a graduate, from what school or college?..... Date of graduation..... Have you any other degree?..... Are you licensed in any other State; if so, what State..... Date of such license.....

.....On oath, deposes and says that the answers and statements made in the foregoing application are true. Subscribed and sworn to before me.....this.....day of.....190..

.....Notary Public.

Give name as you wish it to appear on license.

### **Utah.**

Examination required with or without diploma. Examination fee, \$25. No special examinations granted to practitioners already in practice. Reciprocal interchange of license with New Jersey and Idaho in accordance with the provisions of the Asheville resolution. Examinations usually in June and November. Secretary, A. C. Wherry, Salt Lake City, Utah.

Board of Dental Examiners and the branches in which they examine: E. A. Tripp, President, Atlas Building, Salt Lake City, Pathology, Histology and Bacteriology; A. C. Wherry, Secretary and Treasurer, McCormick Building, Salt Lake City, Anatomy and Physiology; S. H. Clawson, Salt Lake City, Surgical and Mechanical Dentistry; W. G.

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Dalrymple, Ogden, Utah, Materia Medica and Chemistry; Enoch Van Cott, Templeton Building, Salt Lake City, Operative Dentistry and Metallurgy. A. C. WHERRY, Secretary.

### **Vermont.**

Examination required in all cases. Examination fee, \$25. No special examination for practitioners already in practice. Board is empowered to make interchange of license in accordance with the Asheville resolution. Interchange with New Jersey. Secretary, J. H. Jackson, Burlington, Vt. Board of Examiners: President, M. L. Cleaves, Montpelier; Secretary and Treasurer, J. H. Jackson, Burlington; G. F. Cheney, St. Johnsbury; L. E. Mellen, Middleburg; E. O. Blanchard, Randolph.

### **Virginia.**

Board of Dental Examiners: President, H. W. Campbell, Suffolk, Va., examines in Pathology and Therapeutics; Secretary, J. P. Stiff, examines in Operative Dentistry; B. Bridgeforth, Richmond, Va., examines in Oral Surgery and Chemistry; R. C. Lewis, Culpeper, examines in Histology and Anatomy; J. A. Colvin, Charlottesville, examines in Physiology and Materia Medica; W. M. Sturgis, Norfolk, Va., examines in Metallurgy and Prosthetic Dentistry.

Examinations required with or without diploma. Examination fee, \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations in Richmond, Va., the second Tuesday in June of each year. Secretary, Dr. J. P. Stiff, Fredericksburg, Va.

### **Washington.**

Requirements: Examination required with diploma. Examination fee, \$25. No special examinations granted to practitioners already in practice. No interchange of license with any State. Examinations in Tacoma during May and September.

Board of Examiners: President, E. B. Edgers, 311 Alaska Bldg., Seattle; Secretary, C. C. Mann, Spokane; C. S. Irwin, Vancouver; W. B. Power, Spokane; Geo. N. Metzgar, Dayton. C. C. Mann, Secretary Spokane.

### **West Virginia.**

Board: C. H. Bartlett, President, Parkersburg; J. Fleetwood Butts, Secretary, Charleston; Mason B. Ambler, Attorney, Parkersburg; W. A. Williams, Huntington; Fred R. Stathers, Clarksburg; John W. Storer, Wheeling.

The next West Virginia Dental Examinations will be held at Wheeling, W. Va., on June 8th, 9th and 10th, 1910. Applicants for examination must file application accompanied by the fee of \$25 five days before the meeting. For other information, write J. Fleetwood Butts, Secretary, Charleston, W. Va.

### **Wisconsin.**

Board: J. J. Wright, D.D.S., President, Milwaukee; F. A. Tate, D.D.S., Rice Lake; G. C. Marlow, D.D.S., Lancaster; C. H. Seegler, D.D.S., Manitowoc; C. S. McIndoe, D.D.S., Secretary, Rhinelander.

Regular annual meeting June 21st, at Milwaukee.

Requirements: The possession of a diploma in itself gives no right to engage in the practice of dentistry in this State, all persons must appear for examination at stated meetings of the board and receive license before

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commencing the practice of dentistry in this State. Under the provisions of the law, no license can be granted except after a satisfactory examination by the Board at a regular meeting, with the exception of students matriculated and in regular attendance in colleges of this State at the time of the passage of the present dental law. No temporary license can be issued or authority given by any member of the board to engage in practice without procuring a license as above stated: hence the necessity of carefully noting the time and place of these meetings.

Candidates for examination will be required to take a written examination on the following branches: Theory and Practice of Clinical Dentistry, Chemistry, Metallurgy, Operative Dentistry, Prosthetic Dentistry, Physiology, Anatomy, Histology, Oral Surgery, Orthodontia, Pathology, Materia Medica.

A practical examination will be required of one contour gold filling, also the soldering of a three-tooth porcelain-faced bridge, backed with pure gold and using not less than an 18K gold for soldering. The candidate must bring this bridge prepared for soldering, and it will be necessary to complete the work in the presence of one of the examiners.

In the examination of Prosthetic Dentistry the candidate will be required to bring an articulator with models mounted, and a full set of upper and lower plain teeth to be set up and articulated.

All material and instruments for these operations must be furnished by the candidate. \* The candidate must furnish his own patient for operating. The written examination will be given first, in order to give the candidate time to get proper material for operating.

Examinations last from three to four days.

An average of 80 per cent. is required on all branches.

Eligible candidates must fulfil the following requirements:

Any regular graduate of a duly incorporated and, in the judgment of the board, reputable dental college, or any person who shall have been regularly engaged in the reputable practice of dentistry consecutively for four years immediately preceding his application for examination, or any person who has served as an apprentice to a dentist engaged in the reputable practice of dentistry, for a period of five years, who may desire a license to practice dentistry in this State, may appear before the State Board of Dental Examiners.

Application must be made to the Secretary fifteen days before the date of examination, accompanied by a fee of ten dollars (\$10).

Diploma or affidavit must be filed at the time of examination.

Annual Registration.—All licenses and all rights under the law *expire on the 30th day of September of each year.*

Any person continuing in the practice of dentistry after that date without holding a certificate of registration for the following year is liable to the penalty of the law for each and every operation he performs.

Wyoming. An examination is required of all applicants and only holders of diplomas from reputable dental colleges are eligible to such examination. No dentist can begin the practice of his profession in this State without first making application for an examination to the Secretary of the board, and at the

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same time paying the examination fee of \$25.00 and submitting his diploma for inspection. The applicant will then be examined at the next meeting of the board, and if he passes a satisfactory examination, a license will be issued to him. Until he receives this license he is not authorized to begin practice, and no license can be granted under the law except at a regular meeting of the board. The possession of a diploma in itself gives no right to practice in this State. One examination is held annually the first week in July each year. The time, date and place are set by the board. All applications must be completed and in the hands of the Secretary thirty days prior to the time set by the board for examinations to begin. Besides the written examinations each applicant must come prepared to do any practical work which may be required. For further information and application blanks, address Peter Appel, Jr., Secretary, P. O. Box 643, Cheyenne, Wyoming.

The board will meet to hold examinations in July at the State Capitol Building, Cheyenne, Wyo. The passing grade in Operative and Prosthetic Dentistry must be 85 per cent., and in all the other branches 75 per cent.

Board of Dental Examiners: Drs. Wm. Frackelton, Sheridan, President, examines in Physiology, Operative Dentistry, Pathology and Oral Surgery; W. C. Cunningham, Evanston, Treasurer, examines in Chemistry and Metallurgy, Prosthetic Dentistry; Peter Appel, Cheyenne, Secretary, examines in Anatomy, Histology, Bacteriology, Anesthesia, Therapeutics and Materia Medica.

**Alaska.** Alaska has no dental examining board and but thirty-three dentists are reported according to the latest information obtainable. Individual dentists in Alaska were interrogated with this result:

"FAIRBANKS, ALASKA, December 9, 1908.

"Dear Doctor:

"The field is open in Alaska. No credentials of any kind are necessary. Don't know what town to recommend. This place and the surrounding country is pretty well represented in all the professions and especially dentistry. I don't think any one coming here to practice dentistry would make any money. It costs \$150 to \$160 to come here from Seattle.

"Yours truly,

"DR. N. W. TRABUE."

"Alaska has never had a valid medical law until last year. When a medical law was passed requiring a five-year residence in Alaska, or in lieu of that a diploma from a recognized college, or a satisfactory examination before a Board of Examiners.

"Our delegates in Congress will have a similar dental law introduced at this session which will no doubt pass, as it has the endorsement of the medical profession, without opposition.

"The people are now demanding stringent medical and dental laws on account of the injury done them by incompetents and quacks who have come to Alaska because they could go nowhere else.

"Nome, Alaska, January 4, 1909.

"A. D. ANDREWS."

Alaska has no dental law yet.

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### **Hawaii.**

Examination required with diploma. Examination fee, twenty dollars (\$20). No special examinations granted practitioners already in practice. No interchange of license with any State. Examinations occur annually, in July, in Honolulu.

Board of Examiners: President, Geo. H. Huddy, D.D.S., Lihue; Secretary and Treasurer, C. B. High, D.D.S., Young Building, Honolulu.

Members of Board: Geo. H. Huddy, C. B. High and A. J. Derby. For further information, blanks, etc., address Secretary C. B. High, Young Building, Honolulu, Hawaii.

Section 5. Dental Laws of Hawaii: "Any one twenty-one years of age and of good moral character, who has graduated at and holds a diploma from a reputable dental college, and who desires to practice dentistry in this territory, shall file his application with and pay to the Secretary of the board a fee of \$20, which in no case shall be refunded, and shall present himself or herself for examination at the first meeting of the board after such application, and upon passing an examination satisfactory to the board his or her name, age, nationality, location and number of years of practice shall be entered in a book kept for that purpose, and a certificate of a license to practice shall be issued to such person."

**Philippine Island.** An Act Regulating the Practice of Dentistry in the Philippine Islands: By authority of the United States, be it enacted by the Philippine Commission, that:

Section 1. The Commission of Public Health for the Philippine Islands shall appoint a Board of Dental Examiners for the Philippine Islands, with the advice and consent of the Board of Health for the Philippine Islands, consisting of three reputable practitioners of dental surgery, who shall be graduates in good standing of legally incorporated dental educational institutions recognized by the National Association of Dental Faculties and the National Association of Dental Examiners of the United States of America. They shall hold office for three years after their appointment, and until their successors are appointed and qualified:

Provided, that the first appointees shall be appointed for a period of one, two and three years, respectively, as specified in their certificates of appointment from the Commissioner of Public Health; and provided further, that no member of the faculty of any school, college or university in which dentistry is taught shall be eligible for appointment on said board.

Section 3, Dental Laws of Philippine Islands: "The Board of Dental Examiners shall meet in the city of Manila for the purpose of examining candidates desiring to practice dentistry in the Philippine Islands on the first Tuesday of January and July of each year, after giving thirty-days' written or printed notice of such meeting to each candidate who has filed his name and address with the Secretary and Treasurer of the board, and after publishing such notice in one newspaper published in the English language and one newspaper published in the Spanish language at Manila at least once per week for a like period. The Board of Dental Examiners shall issue a dental surgeon's certificate to each candidate who furnishes satisfactory proof of having received a diploma as either Doctor

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of Dental Medicine or Doctor of Dental Surgery from a legally incorporated dental educational institution, and who in addition passes a satisfactory examination before the board in the following subjects: Anatomy, Physiology, Histology, Physics, Chemistry, Metallurgy, Dental Anatomy and Orthodontia, Oral Surgery, Operative Dentistry and Prosthetic Dentistry. From each candidate the Secretary and Treasurer shall collect a fee of \$10."

Board of Examiners: President, H. C. Strong, Manila; Secretary and Treasurer, A. P. Preston, Manila; Antonio Vergel de Dros, Manila.

### Porto Rico.

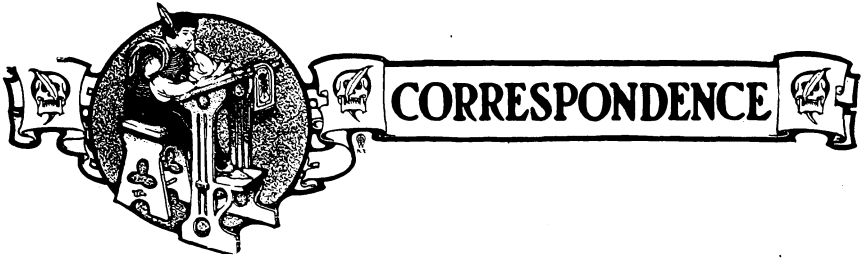
The holding of a diploma of a reputable American dental college does not exempt the applicant from an examination before the Dental Board of Examiners of Porto Rico. However, if the applicant possesses a license from a State where the requirements are equal to those of Porto Rico, it is discretionary with the board to grant a license without an examination.

The dental law in force on the Island will probably be modified during the coming session of the Legislative Assembly of Porto Rico. Such modifications as contemplated will not affect the law in its general sense, but will refer only to details which at present are not wholly intelligible. No modification in dental laws reported.

Board of Dental Examiners: Dr. Manuel V. del Valle, President, 52 Allen Street, San Juan, P. R.; Dr. L. R. Non, Secretary, 6 San Justo Street, San Juan, P. R.; Dr. J. Modesto Bird, Fajardo, P. R.

Dental law of Porto Rico permits applicants to obtain a license who possess a diploma from a college "possessing a sufficiently high grade of standard dental education." (See Section 5, Dental Law of Porto Rico.)





## Dental Surgeons for the Militia of the United States.

WASHINGTON, D. C., March 16, 1910.

Editor, ITEMS OF INTEREST,

Dear Sir:—It has generally been supposed that legislation granting a commissioned dental corps for the United States Army was only of interest to the few dentists who might obtain the positions, some 60 to 85 at the most. This has, to some extent, been true heretofore, but from January 21, 1910, owing to a law passed by Congress reorganizing the State Militia of the United States, the legislation extends to every State and Territory in the United States. Should a commissioned dental corps now be incorporated into the regular service of the United States Army, by the Act of May 27, 1908, automatically, by this law, a like commissioned dental corps is incorporated into every State Militia or military organization coming under that law, which means, if the present proposed proportion of 1 dental surgeon to each 1,000 for the regular service is passed, that in all the States and Territories a like number of commissioned dental surgeons will be commissioned in the same proportion to the number of State Militia, and being a part of the Staff Corps, one or more will be directly attached to the Governor's Staff of each State and Territory, with the special status that goes therewith. Given the number of your State Militia, you can figure the number of dental surgeons to be commissioned, 1 to 1,000. This must interest every dentist and dental organization throughout the country. The law is as follows:

"On and after January 21, 1910, *the organization*, armament and discipline of the organized militia in the several States and Territories and the District of Columbia shall be the same as that which is now or *may hereafter* be prescribed for the Regular Army of the United States, subject in time of peace to such general exceptions as may be authorized by the Secretary of War."

EMORY A. BRYANT,

Secretary, Committee National Dental Association.



## Reorganization of the National Dental Association.

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Dr. Ottolengui's editorial in the October number of *ITEMS OF INTEREST*, on the proposed revision of the constitution of the National Dental Association is thorough and timely. That some change in the association is necessary seems evident from the fact that the appointment of a committee to report on that matter, and that the reorganization on the plan of the American Medical Association is the probably choice of the majority, seems to be indicated by the fact that so many States have already reorganized on a plan favoring it.

Such a plan will make the local association subservient to the National, and will do much to prevent petty local jealousy from keeping deserving men out of the association, as is pointed out in an article in the November number of the *Dental Digest*, entitled "The Unassociated Dentist."

If we are to have a National association, let it be a representation large enough to take in every ethical practitioner, and yet simple in its workings. It seems to me that Dr. Ottolengui's criticism of the proposed revision is just and charitable. The doctor very clearly points out the defects of the revision plan, and one can readily see that such a plan will be productive of complication and disputes.

JAS. S. DANFORTH, D.D.S.

Sheboygan, Wis.

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Dear Dr. Ottolengui:

I have just been reading your editorial in the October *ITEMS OF INTEREST*, and it seems to me your criticisms are most excellent, fair and kind. To revise as proposed would, I fear, be a serious mistake. It seems to me that the State association, and no other, should be included in the National and represented according to membership, also assessed as per membership to defray expenses of the National. With us here (which I presume is general) one can not become a member of local dental societies except he is a member of the State association. So ethical society men would thus be all brought into the National association, which would make a grand unit ready for splendid work.

I think it fine of you in this way to make the interest general and try to get us ready to do the right thing our next meeting.

Yours very truly,

Hartford, Conn.

NELSON J. GOODWIN.

## ITEMS OF INTEREST

Dear Dr. Ottolengui:

I have considered your letter of October 4 and the editorial to which it refers.

Your exceptions to the proposed revision of the National Dental Association seem to me well taken.

Your statement of the fundamental principle to be observed, "a National organization, composed of constituent State societies, and governed by a delegate body equally apportioned among the constituent States," seems to me unassailable.

I hope a reorganization in harmony with that principle will prove feasible.

Very truly yours,

HENRY W. GILLET.

140 West 57th Street, New York.

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My Dear Dr Root:

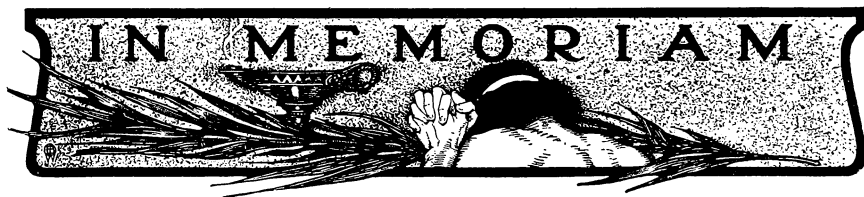
It is desirable that the National should have a large membership, and especially that its membership be drawn from all parts of the country; and, as you say, the logical way is to band the various State societies into a National. But I fear that these same State Societies, many of them in themselves as large or larger than the National, will not be attracted by the proposed new Constitution of the National, which, as I pointed out in the letter to which you refer, proposes that these same State societies shall have no *direct* representation in the House of Delegates of the reorganized National.

I do not at all like your sentence, "If your experience leads you to believe you can excite their patriotism to the extent that they will flock in, regardless of any profit to themselves, yours differs from mine. They ask, *and rightly so* (the italics are mine), wherein do we benefit?" I can not, simply can not believe, Doctor, that the men that compose our profession, the great majority of them, are so low as that. You start in to answer your question, "Wherein do we benefit?" very well, but you soon "peter out." You say: "You assist in making a large and representative body, once a credit to your profession; you have the privilege of attending or not, as you desire; in return for your dues you have your membership and the *National Dental Journal*." I say you miss the thing above all else that impelled me to join the National, and which I think and believe will impell so many to join, when it is made desirable for them to join, and that is to help *advance* the profession to which I belong, and that is what it is, because such men have ennobled it in the past, that such societies have existed as have existed in the past, and thus made it possible for poor little me to inherit this legacy of a noble profession.

This ennobling of our profession was not done by men that "asked, and rightly so, wherein do we benefit?" If you think so, just ask yourself what can the very men that I criticise in the present Council of the National have possibly gained to repay themselves for all the time and money they have expended for the National. Has not Dr. Holly Smith, for instance, given much, much more than he has received? His only everlasting reward is the consciousness that he has done what he could to advance the National, and his profession with it. I do not have to agree with his every move to grant him this merited praise, but I am sure I can speak for him myself and thousands of others, when I say we shall not approach the future in any "wherein do we benefit?" attitude. Rather shall we say we want to be members of a body composed of men who are willing, even anxious, to give much more than we receive to the end, that our profession may *advance* and that the National Association of America shall lead the advance.

Portland, Me.

H. A. KELLEY.



### Dennis Frank Keefe, M.D., D.D.S.

We regret to announce the death of Dr. Dennis Frank Keefe, who departed this life in Providence on February 1st, 1910.

Dr. Keefe was a graduate of the Worcester Grammar and High-schools. He received the degree of Doctor of Dental Surgery at the New York College of Dentistry in 1888, and Doctor of Medicine at the College of Physicians and Surgeons. He was a member of the Rhode Island Board of Registration in Dentistry for sixteen years, serving at one time as President. He also had served as President in the Rhode Island Dental Society and the New England Association of Dental Examiners. For twenty years he was the Attending Dental and Oral Surgeon to the Rhode Island and St. Joseph's Hospitals, and at the time of his death he was Consulting Dental and Oral Surgeon in the above-named institutions. He

## ITEMS OF INTEREST

was also Dental Surgeon to the Rhode Island State Sanitarium for Tuberculosis and likewise to the Providence District Nursing Association. He was a member of the Northeastern Dental Association, Rhode Island Dental Society, Massachusetts Dental Society, and the New England Association of Dental Examiners.

He was married in March, 1893, to Miss Lucy Campbell, of Boston, who survives him. He also leaves three daughters, the Misses Lucile, Alice and Rose.

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The following resolutions on the death of Dr. Dennis Frank Keefe were passed by the Rhode Island Board of Registration in Dentistry, February 11, 1910:

*"Resolved*, that by the death of Dr. Keefe, the community has suffered a loss of one whose genial personality, devotion to the welfare of the profession, and sixteen-years' service as a member of the Board of Registration made him well and favorably known.

*"Resolved*, that we, as members of the Rhode Island Board of Registration in Dentistry, extend our sincere sympathy to his family in their bereavement, and express to them our high regard of his personal and professional qualities.

*"Resolved*, that a page of the records be devoted to these resolutions, a copy be sent to this family, and that they be published in the dental journals.

"ALBERT L. MIDGLEY,

"HARRY L. GRANT,

Committee.





# SOCIETY ANNOUNCEMENTS

## **National Society Meetings.**

Southern Branch of the National Dental Association, Houston, Texas, May 4, 5, 6, 1900.

National Dental Association, Denver, Colo., July 19, 20, 21, 22, 1910.

National Association Dental Examiners, Denver, Colo., July 25, 1910.

American Society of Orthodontists, Denver, Colo., July 13, 14, 15, 1910.

## **State Society Meetings.**

Alabama Dental Association, Mobile, Ala., May 10, 13, 1910.

California State Dental Association, San Francisco, Cal., June 22, 23, 24, 25, 1910.

Connecticut State Dental Association, New Haven, Conn., April 19, 20, 1910.

Illinois State Dental Society, Springfield, Ill., May 17, 18, 19, 20, 1910.

Indiana State Dental Association, Indianapolis, Ind., May 17, 18, 19, 1910.

Iowa State Dental Society, Des Moines, Ia., May 3, 4, 5, 1910.

Maine Dental Society, Rangeley, Me., June 22, 23, 24, 1910.

Massachusetts Dental Society, Springfield, Mass., June 14, 15, 16, 1910.

Mississippi Dental Association, Jackson, Miss., May 24, 25, 26, 1910.

Missouri State Dental Association, St. Louis, Mo., May 24-27, 1910.

Montana State Dental Society, Great Falls, Mont., May 6, 7, 1910.

Nebraska State Dental Society, Omaha, Neb., May 17, 18, 19, 1910.



New Jersey State Dental Society, Asbury Park, N. J., July 20, 21, 22, 23, 1910.

New York State Dental Society, Albany, N. Y., May 5, 6, 7, 1910.

Pennsylvania State Dental Society, Harrisburg, June 28, 29, 30, 1910.

Kansas State Dental Association, Topeka, Kansas, May 17, 18, 19, 1910.

Kentucky State Dental Association, Louisville, Ky., May 26, 27, 28, 1910.

Louisiana State Dental Society, New Orleans, La., May 9, 10, 11, 1910.

Texas State Dental Association, Houston, Texas, May 3, 1910.

Vermont and New Hampshire Dental Societies, Rutland, Vt., May 17, 18, 19, 20, 1910.

Virginia State Dental Association, Staunton, Va., July 20, 21, 22, 1910.

Wisconsin State Dental Society, Ashland, Wis., July 12, 13, 14, 1910.

West Virginia State Dental Society, Parkersburg, W. Va., Oct. 12, 13, 14, 1910.

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### **New Jersey State Dental Society.**

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The fortieth annual meeting of the New Jersey State Dental Society will convene in Asbury Park, N. J., at the "Casino," July 20, 21, 22 and 23, 1910. This is to be the largest meeting ever held. Two days will be devoted to difficult and interesting clinics, which should not be missed. Many fine and instructive papers to be read. Hotel Columbia will be the headquarters of the Society. Asbury Park is ideal for the meetings of the Society, with its ocean frontage, large and cool. The entire floor of the Casino is to be leveled for the exhibitors, which will be many and varied, and everything new will be shown. Asbury Park can be readily reached by rail, boat or motor, and will be a good resort for the visitors to bring their families, who will find the hotels large and commodious, and the entertainment of a high class while they attend the meetings. No one can afford to miss this meeting. Prospective members, ethical practitioners of other States, and members of local societies are cordially invited.

For further information, address the Secretary,

CHARLES A. MEEKER, D.D.S.

29 Fulton St., Newark, N. J.



## **National Association of Dental Faculties.**

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The National Association of Dental Faculties will meet at the Hotel Shirley, Denver, Colorado, Monday, July 25, at 10 o'clock A. M. The Executive Committee will meet to consider business of the Association at 9 o'clock A. M. on the same day.

The Hotel Shirley is connected by bridge with the Savoy, where the meeting of the National Association of Dental Examiners takes place on the same date.

The rates will be \$2 a day for one, and \$3 for two persons in one room, European plan. Large rooms for one or two persons, with private bath, \$4 and \$5 a day.

B. HOLLY SMITH,  
Chairman Executive Committee, N. A. D. F.

Baltimore, Md.

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## **California State Dental Association.**

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The thirty-seventh annual meeting of the California State Dental Association will be held in San Francisco June 22, 23, 24, 25, 1910.

An interesting program of papers and clinics is being arranged, and it will be one of the most instructive meetings ever held on the Coast.

Eastern friends are invited to attend on their way to Denver.

San Francisco, Cal.

C. E. Post, Secretary.

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## **Southern California Dental Association.**

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The thirteenth annual meeting of the Southern California Dental Association will convene June 16, 17 and 18, 1910, at the College of Dentistry, University of Southern California, Fifth and Wall Streets, Los Angeles. Visiting dentists are cordially invited.

This is the first of the coast meetings, and is followed by the California State Dental Association, at San Francisco, the Oregon Association at Portland, and the Washington Association at Seattle.

These meetings convene at intervals of a few days, the series being completed in time to reach Denver for the National Dental Association.

B. FRANK GRAY,  
Chairman, Publicity Committee, Southern California Dental Ass'n.



## **Susquehanna Dental Association of Pennsylvania.**

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The forty-seventh annual meeting of the Susquehanna Dental Association of Pennsylvania will be held at Hotel Oneonta, Harvey's Lake, Luzerne County, Pa., Tuesday, Wednesday and Thursday, May 24, 25, 26, 1910.

Harvey's Lake is a beautiful mountain resort, twelve miles from Wilkes-Barre, and the Oneonta is a modern summer hotel.

An excellent program of papers and clinics is being prepared, and among those who will participate are: Drs. V. H. Jackson, New York; E. C. Kirk, Louis Jack, E. T. Darby, H. C. Register, J. G. Lane, Philadelphia; and C. S. Van Horn, Bloomsburg.

Exhibitors desiring space should address Dr. F. L. Davenport, N. Franklin St., Wilkes-Barre. All other communications to Dr. A. E. Bull, Chairman, South Washington St., Wilkes-Barre.

All ethical practitioners are cordially invited to attend.

E. J. DONNEGAN, Recording Secretary.

Scranton, Pa.

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## **Odontological Society of Western Pennsylvania.**

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The Odontological Society of Western Pennsylvania will hold its twenty-ninth annual meeting at the Monongahela House, Pittsburgh, Pa., April 12, and 13.

The program includes papers by Dr. J. Leon Williams, of London, England, Dr. J. P. Buckley, of Chicago, and others. A large list of clinics is being prepared, and the "biggest ever" meeting is expected.

A large hall is reserved for exhibitors, and many new and interesting exhibits will be shown.

Space may be reserved by application to Dr. W. W. Booth, of Carnegie, Pa.

All ethical dentists are invited to attend this meeting and join the Society. For information, address: Program Committee.—Dr. C. E. Peters, Fulton Bldg., Pittsburgh, Pa.; Dr. J. H. Crawford, Diamond Bank Bldg., Pittsburgh, Pa. Exhibition Committee.—Dr. W. W. Booth, Carnegie, Pa. Membership Committee.—Dr. Jno. F. Biddle, Arch St., N. S. Pittsburgh, Pa.



### **Alabama Dental Association.**

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The next annual meeting of the Alabama Dental Association will be held in Mobile, Ala., May 10-13, 1910. All ethical dentists are invited.  
Selma, Ala. E. W. PATTEN, Secretary.

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### **Cleveland District Dental Society.**

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The Cleveland District Dental Society met at Charlotte, N. C., February 17 and 18, and the following officers were elected for the coming year: Dr. P. R. Falls, Gastonia, N. C., President; Dr. R. O. Apple, Winston-Salem, N. C., Vice-President; Dr. A. J. Whismant, Rutherfordton, N. C., Treasurer; Dr. J. R. Osborne, Shelby, N. C., Secretary; Dr. J. C. Watkins, Winston-Salem, N. C., Essayist.

This district society was organized in Cleveland County, N. C., in 1901, with a charter membership of thirteen (13) dentists. But there was so much interest taken by its members that the surrounding counties gradually came in, and now it reaches over the southern middle of North Carolina and has a membership of sixty (60), enrolling twelve new members at its last meeting.

All of its members are very enthusiastic and receive much good from these semi-annual meetings. Artificial enamel and cast gold inlays were the most important clinics and were discussed freely and with much benefit to all present. The paper read by Dr. McConnell, of Gastonia, N. C., on amalgam fillings, was very interesting and instructive.

Next meeting will be held at Shelby, N. C., August 18, 1910.

DR. J. R. OSBORNE.

From Newt. D. Warren.

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### **Chicago Odontographic Society.**

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At the February meeting of the Chicago Odontographic Society the following officers were elected for the ensuing year: President, Frank H. Zinn; Vice-President, G. C. Poundstone; Secretary, T. L. Grisamore; Treasurer, G. W. Dittmar; Librarian, F. H. Methven. Member of Board of Directors, A. D. Black. Board of Censors, G. N. West, E. W. Elliot, L. W. Strong.  
T. L. GRISAMORE, Secretary.



### **Louisiana State Dental Society.**

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The Louisiana State Dental Society will hold its thirty-second annual meeting in New Orleans, Grunewald Hotel, May 9, 10 and 11. A cordial invitation is extended to all who attend the meeting of the Southern Branch of the National Dental Association at Houston, May 4, 5 and 6. There will be special railroad rates to New Orleans and also special rates at the Grunewald Hotel. Stop over and visit historical New Orleans, as well as enjoy the famous "Creole cooking."

J. A. GORMAN, Chairman Executive Committee.  
1108 Maison Blanche, La.

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### **District of Columbia Dental Society and Maryland State Dental Association.**

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A joint meeting of the District of Columbia Dental Society and the Maryland State Dental Association will be held in Baltimore, at the Dental Department of the Baltimore Medical College, June 9, 10 and 11, 1910.

A cordial invitation is extended to all ethical members of the profession to attend and participate.

Exhibitors requiring space are requested to communicate with Dr. Geo. R. Carter, 712 N. Eutaw St., Baltimore, Md.

For further particulars, address,

WM. S. DONNALLY.

1018 14th Street, Washington, D. C.

F. F. DREW.

701 N. Howard Street, Baltimore, Md.

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### **New Hampshire Board of Registration in Dentistry.**

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The next meeting of the New Hampshire Board of Registration in Dentistry, for examination, will be held at Masonic Banquet Hall, Manchester, N. H., June 1, 2, 3, 1910.

No special examinations. All persons must become registered before beginning practice.

A. J. SAWYER, Secretary.

Manchester, N. H.



## **Northern Ohio Dental Association.**

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The fifty-third annual meeting of the Northern Ohio Dental Association will be held in Toledo, at Hotel Secor, June 7, 8, 9, 1910.

It is a good time now to plan for this meeting.

Excellent papers, fine exhibits, A-I clinics, and a rare meeting-place. Toledo, Ohio, June 7, 8, 9, 1910.

G. F. WOODBURY,  
Chairman Executive Committee.

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## **Maryland State Board of Dental Examiners.**

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The Maryland State Board of Dental Examiners will meet for examination of candidates for certificates May 19 and 20, 1910, at the Dental Department of the Baltimore Medical College, Baltimore, at 9 A. M.

Candidates must pass a written examination in Anatomy and Physiology, Oral Surgery, Chemistry and Bacteriology, Pathology, Therapeutics and Materia Medica, Operative and Prosthetic Dentistry.

The practical tests are the insertion of a gold filling in the mouth, and the submission of a metal plate or bridge of not less than four crowns, two being of porcelain, the parts being assembled and invested in advance and soldered in the presence of the board.

Applications accompanied by the fee of \$10 must be filed with the Secretary prior to May 19, 1910.

For further information, address.

F. F. DREW, Secretary.

701 N. Howard Street, Baltimore, Md.

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## **North Carolina State Board of Dental Examiners.**

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The next annual meeting of the North Carolina State Board of Dental Examiners will be held at Wrightsville, N. C., commencing on July 11, 1910.

All applications for examinations must be accompanied with a diploma from a reputable Dental School, which must be filed with the Secretary by 9 o'clock A. M., on the first day of the meeting.

For requirements and further information, address

DR. F. L. HUNT, Secretary.

Asheville, N. C.



### **Washington State Board of Dental Examiners.**

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The next meeting of the Washington State Board of Dental Examiners will be held on May 26, 1910, at Seattle.

Seattle, Wash.

WM. B. POWER, Secretary.

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### **West Virginia State Board of Dental Examiners.**

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The West Virginia State Dental Examination will be held at Wheeling, W. Va., on June 8, 9 and 10, 1910.

Applicants for examination must file their application, accompanied by the fee of \$25. For blanks and other information write,

J. FLEETWOOD BUTTS, Secretary.

Charleston, Kanawha Co., W. Va.

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### **Psi Omega Alumni Dental Fraternity of New York.**

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The annual banquet of the Psi Omega Alumni Dental Fraternity of New York will be held at the Hotel Manhattan on the evening of April 14, 1910.

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### **New York Alumni Association, Xi Psi Phi Fraternity.**

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The annual dinner of the New York Alumni Association, Xi Psi Phi Fraternity, will be held at the Hotel Manhattan, Madison Avenue and 42nd Street, New York City, at 8 P. M., on Saturday, April 2, 1910. Arrangements have been made for every Alumnus residing in or about New York City, and it is hoped that all will take advantage of this opportunity to meet their old classmates again.

J. NORBERT GELSON, Secretary.

673 Vanderbilt Ave., Brooklyn, N. Y.

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### **Odontographic Society of West Philadelphia.**

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On April 4 the Odontographic Society of West Philadelphia will give a smoker and buffet supper instead of holding its usual meeting. The affair will be given in their regular place of meeting, the amphitheater of Dental Hall, University of Pennsylvania, and the Entertainment Committee are making strenuous efforts for a good time.

R. R. PARKS, Secretary.